

N- α -Fmoc-Lys(N- ϵ -tBoc) (1)

N- α -Fmoc-lysine (2)

Fig. 1a

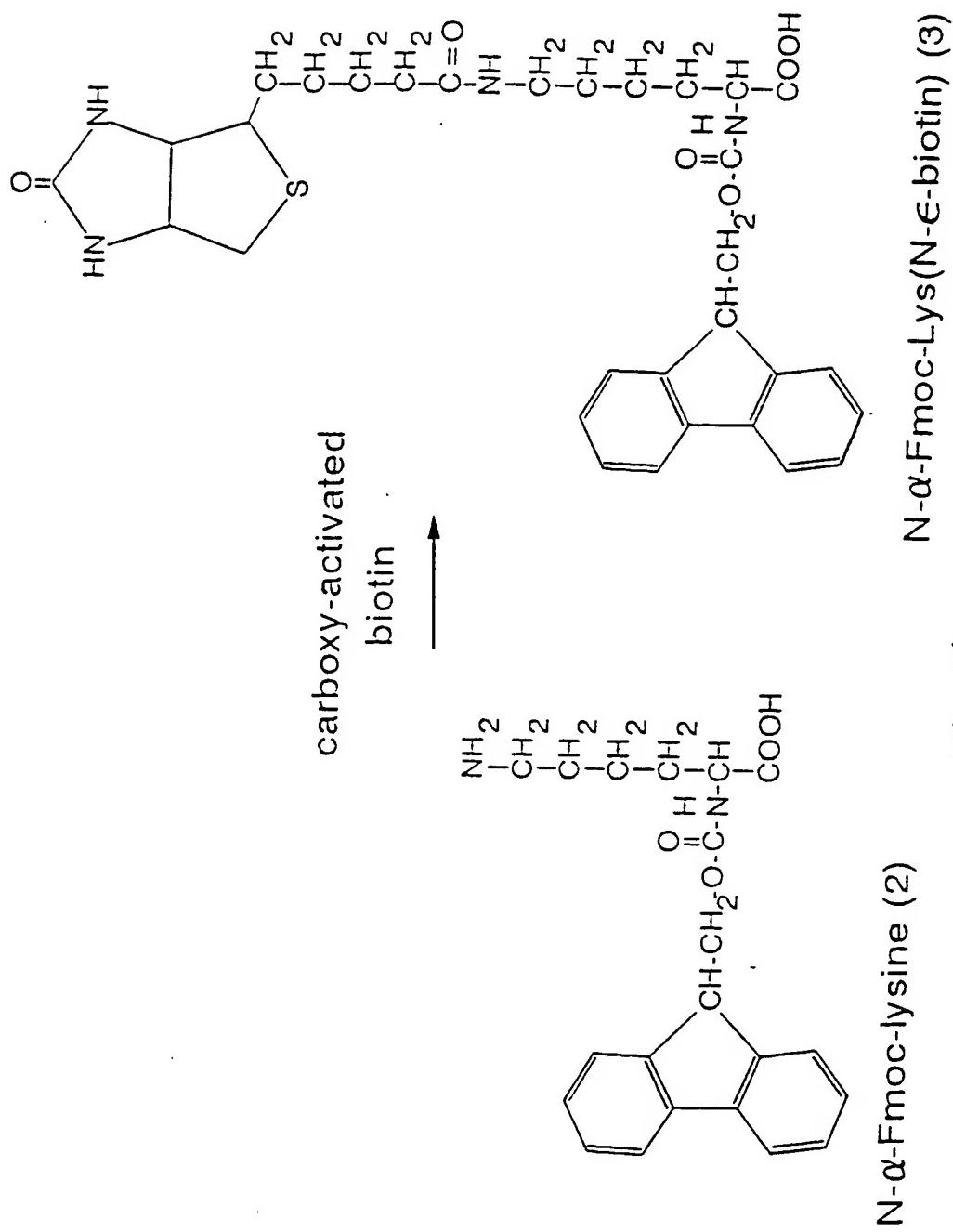
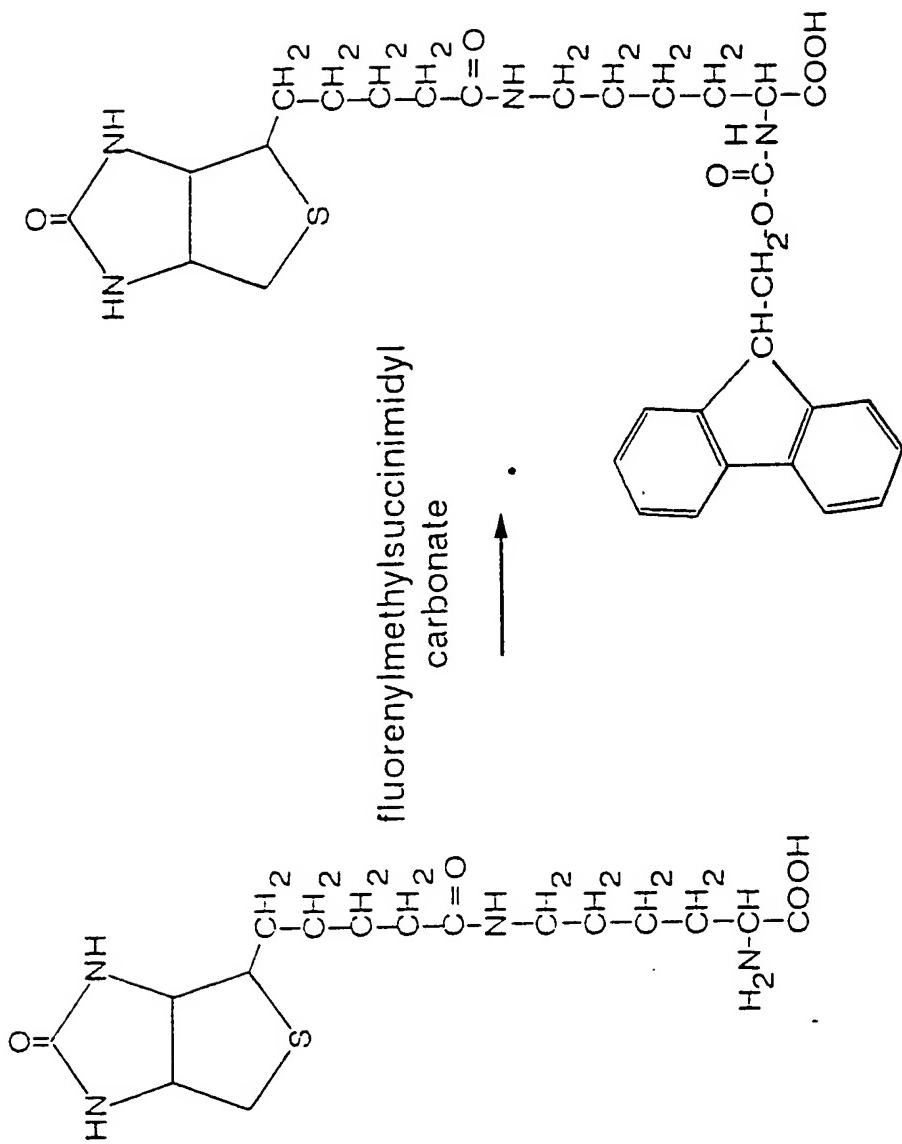


Fig. 1b



$\text{N-}\epsilon\text{-biotinyl lysine}$

Fig. 1c

$\text{N-}\alpha\text{-Fmoc-Lys(N-}\epsilon\text{-biotin)}$

Fig. 2a

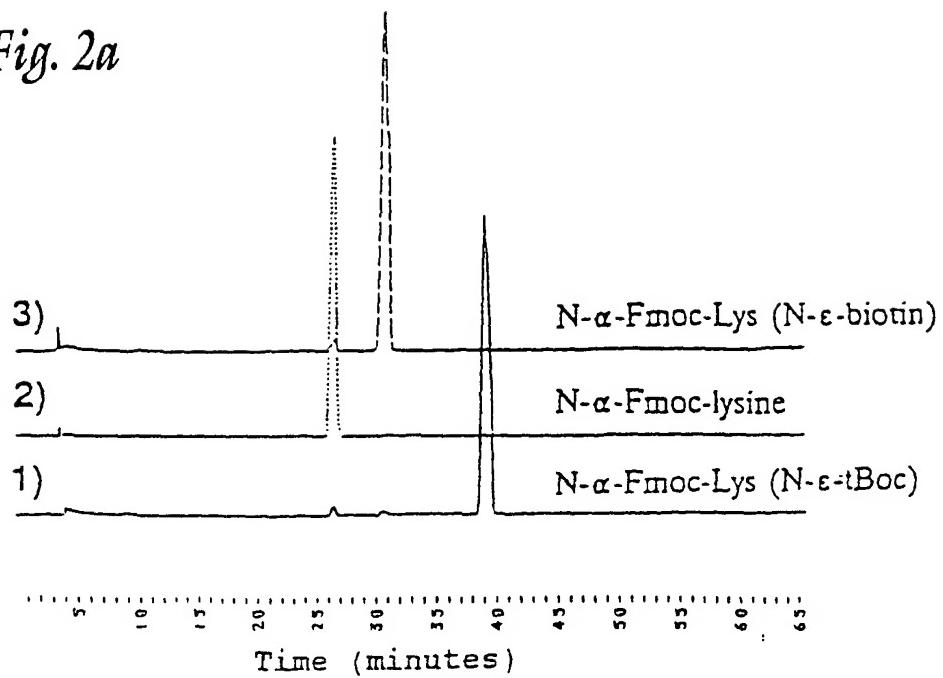
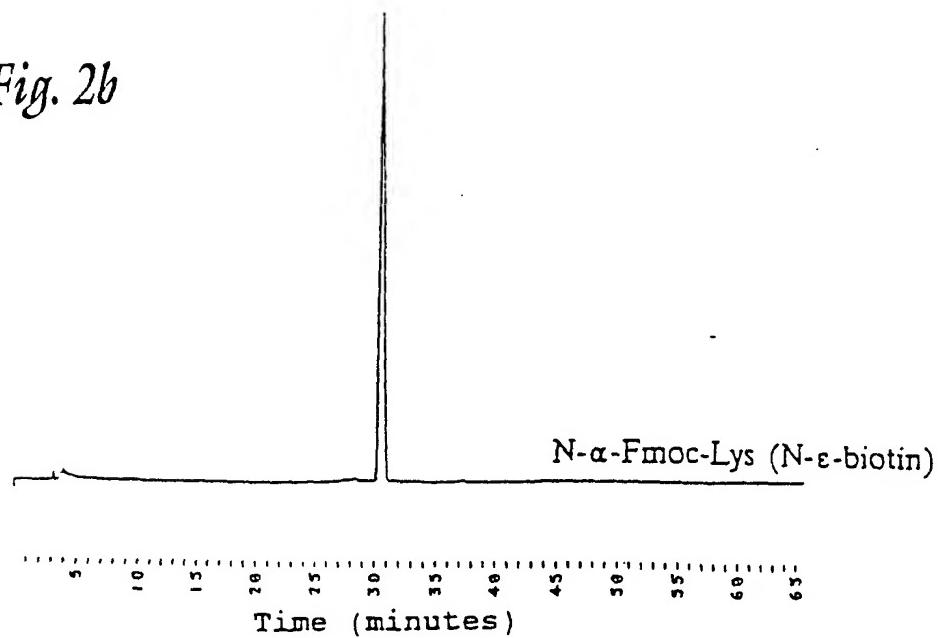
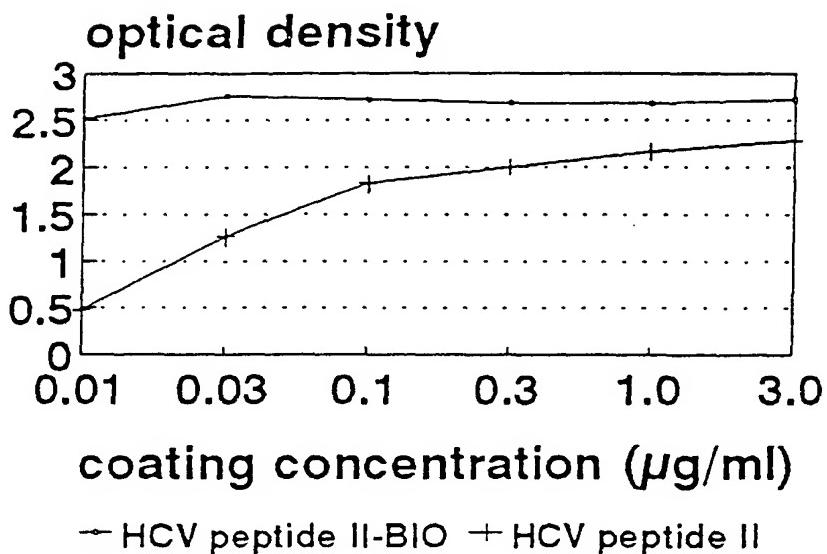


Fig. 2b



sample 8320



sample 8242

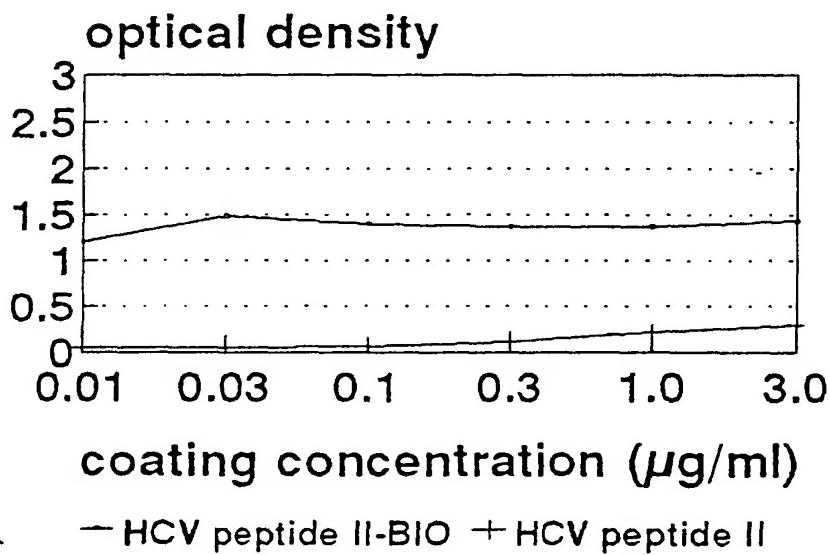
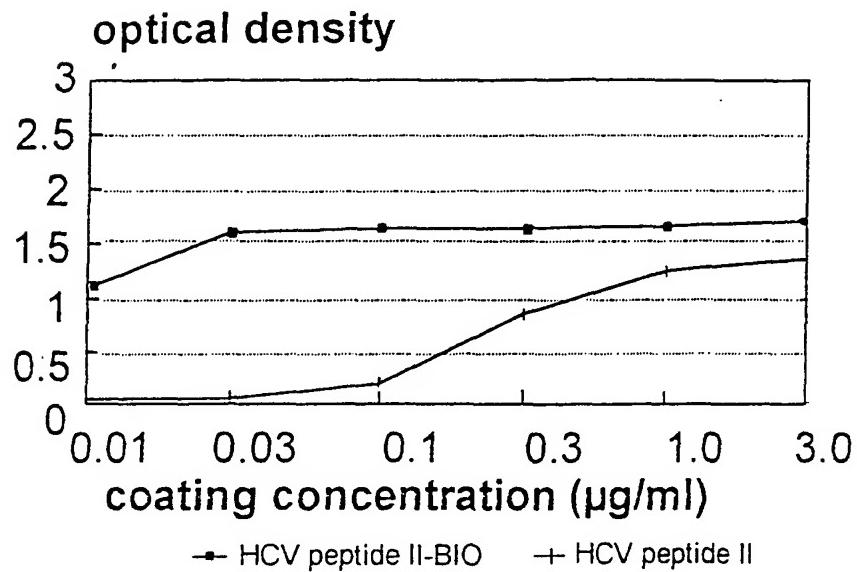


Fig. 3a-1

sample 8243



sample 8318

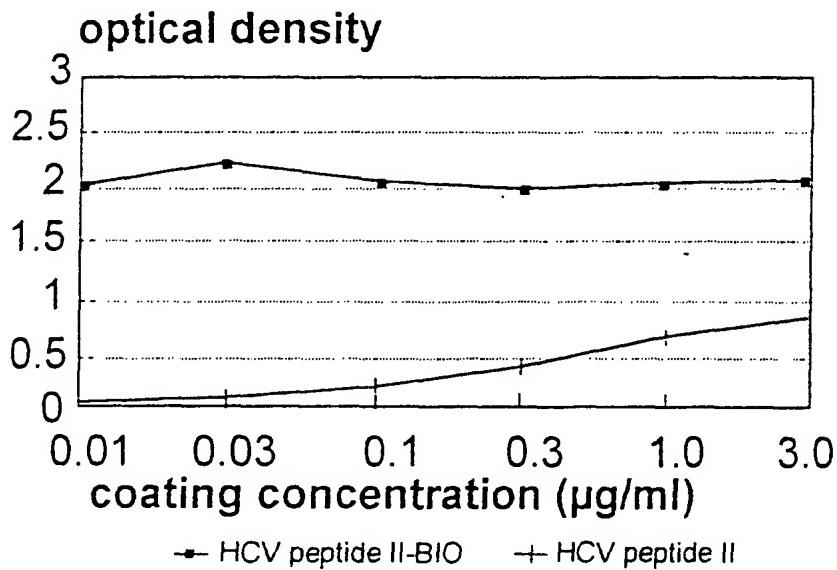
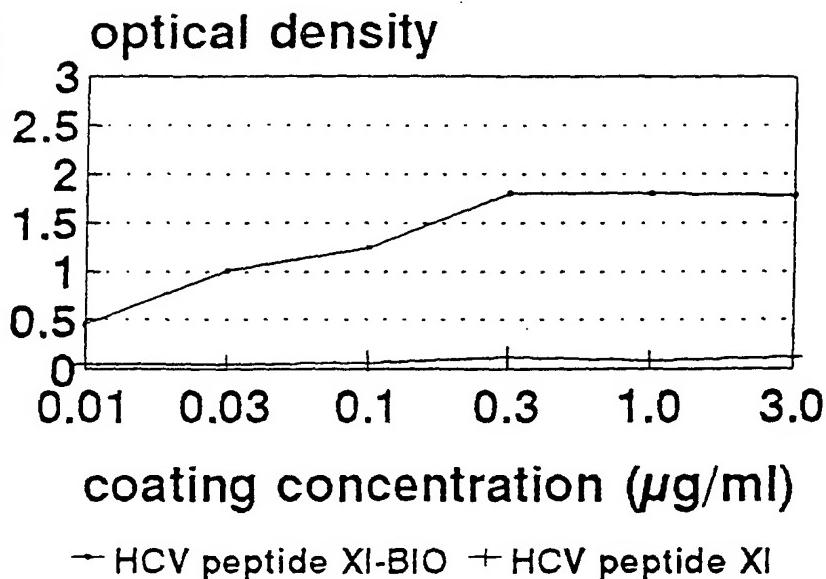


Fig. 3a-2

sample 8320



sample 8326

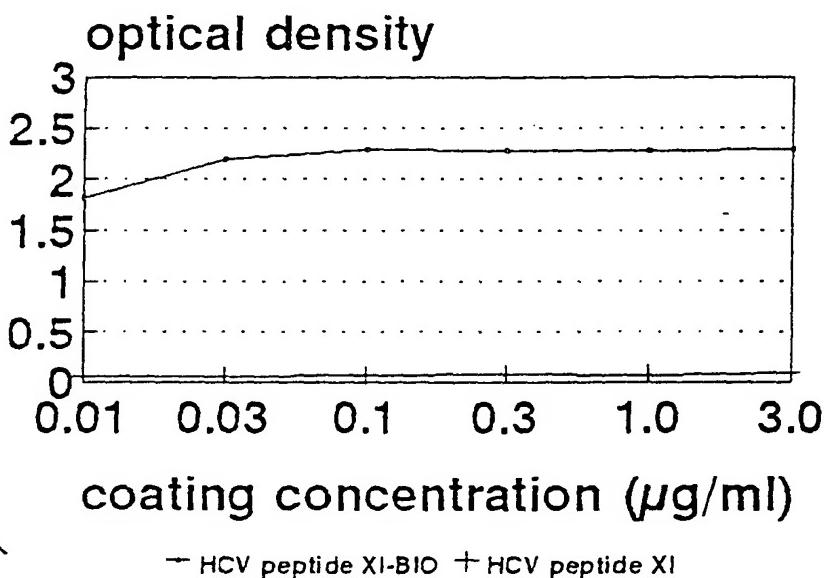
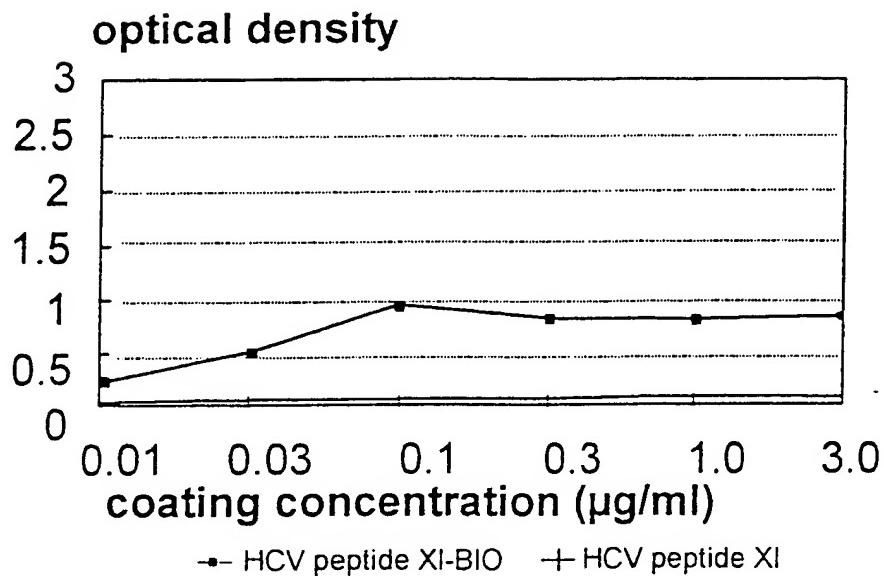


Fig. 3b-1

sample 8242



sample 8243

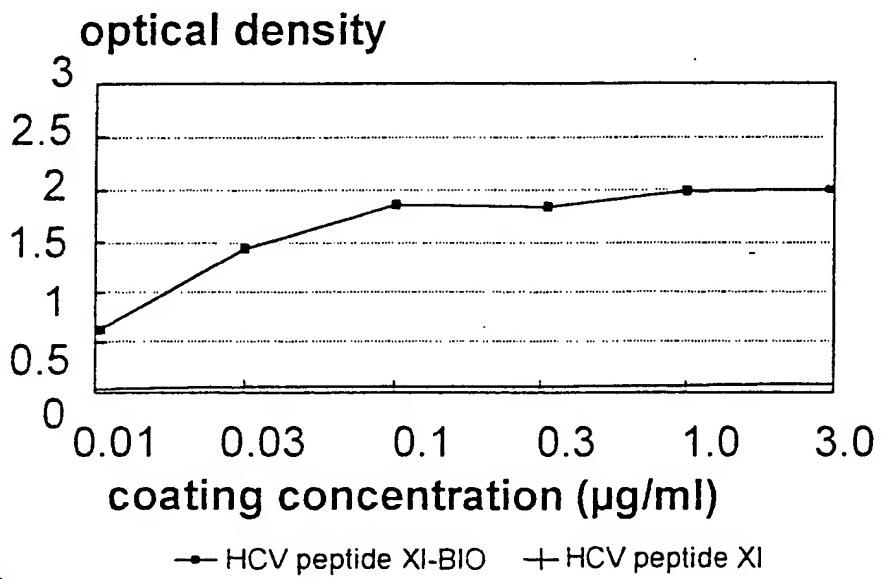
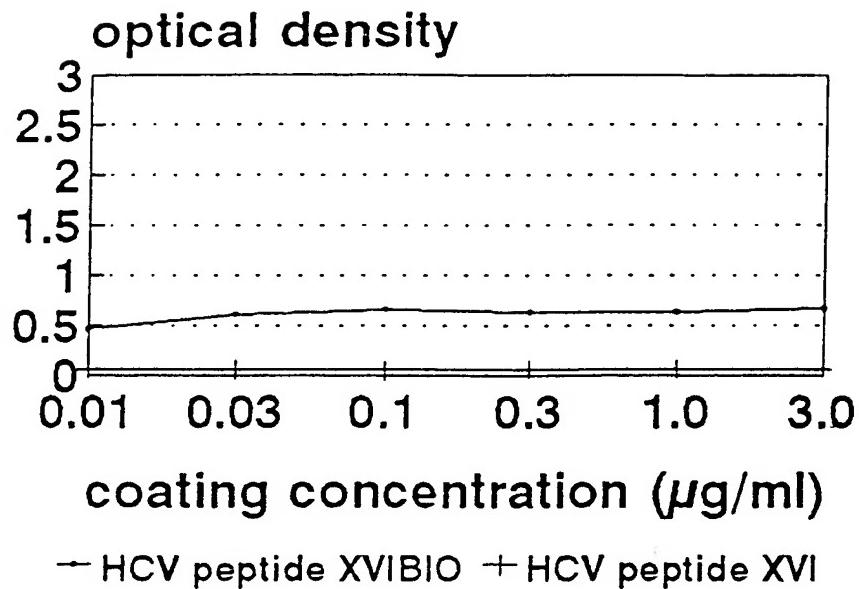


Fig. 3b-2

sample 8243



sample 8318

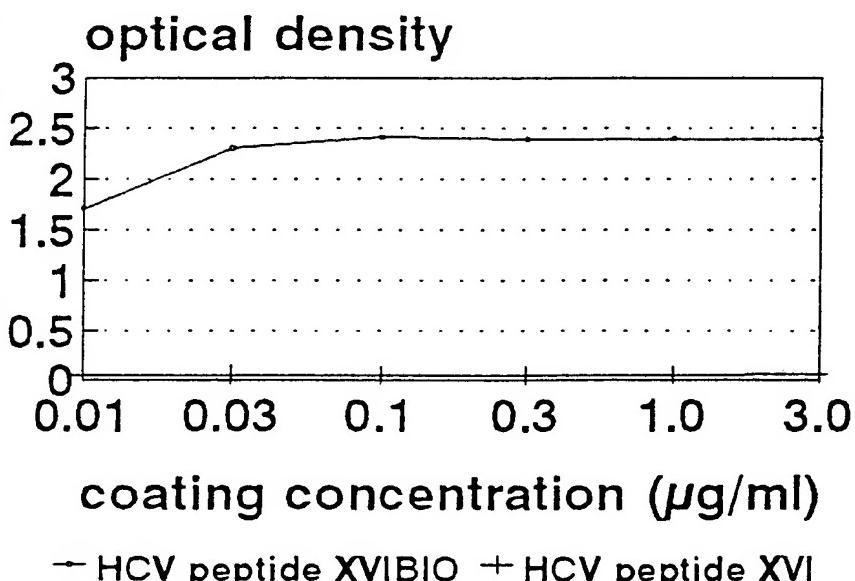
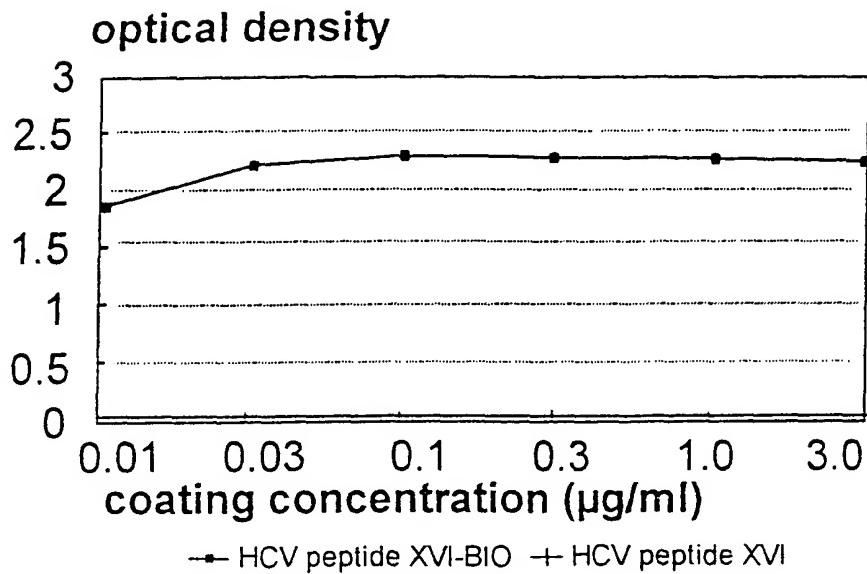


Fig. 3c-1

sample 8326



sample 8242

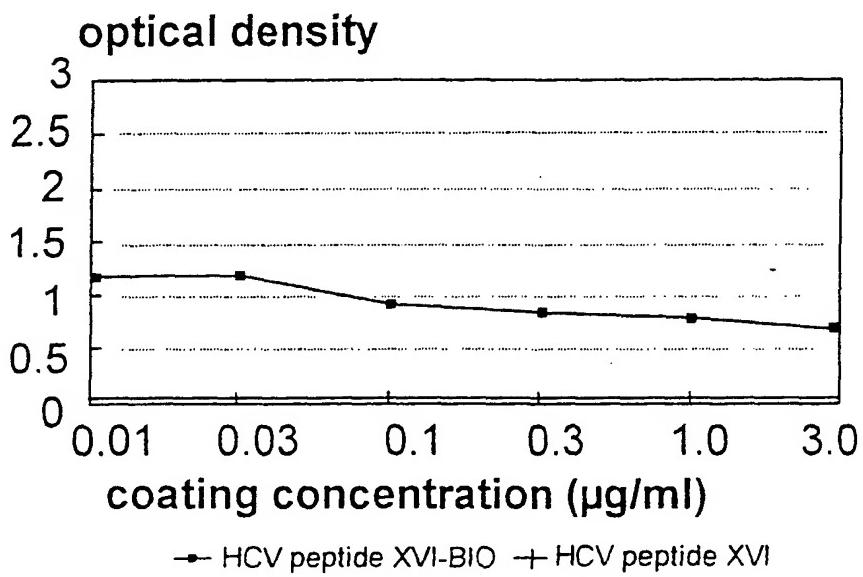
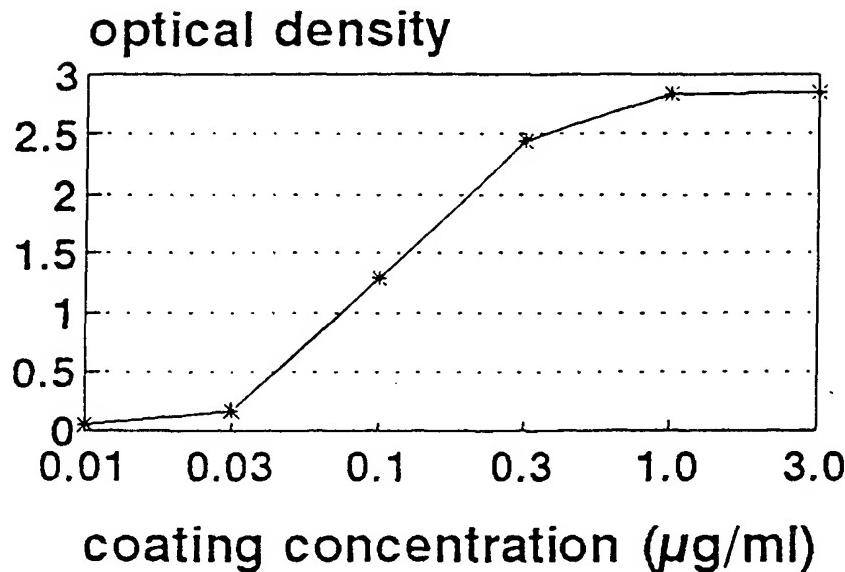


Fig. 3c-2

HCV peptide II-BIO



HCV peptide XI-BIO

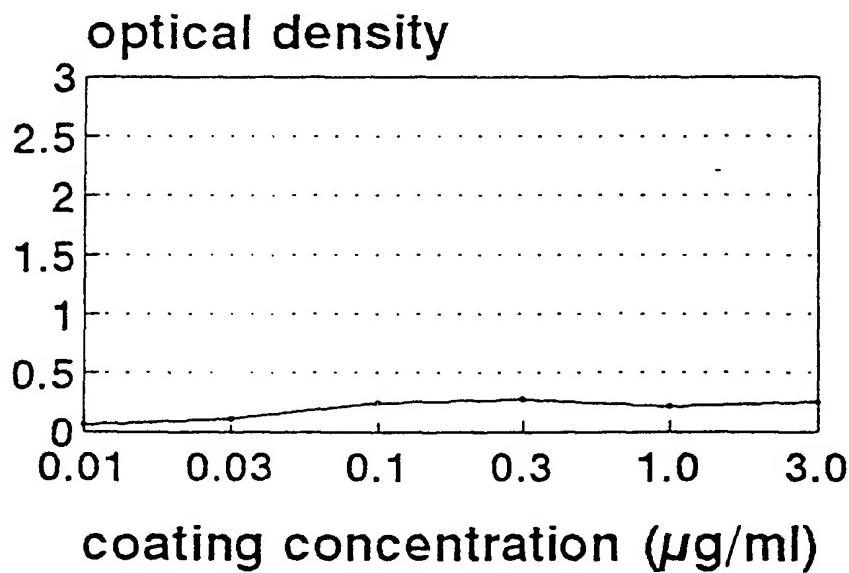


Fig. 4a

HCV peptide XVI-BIO

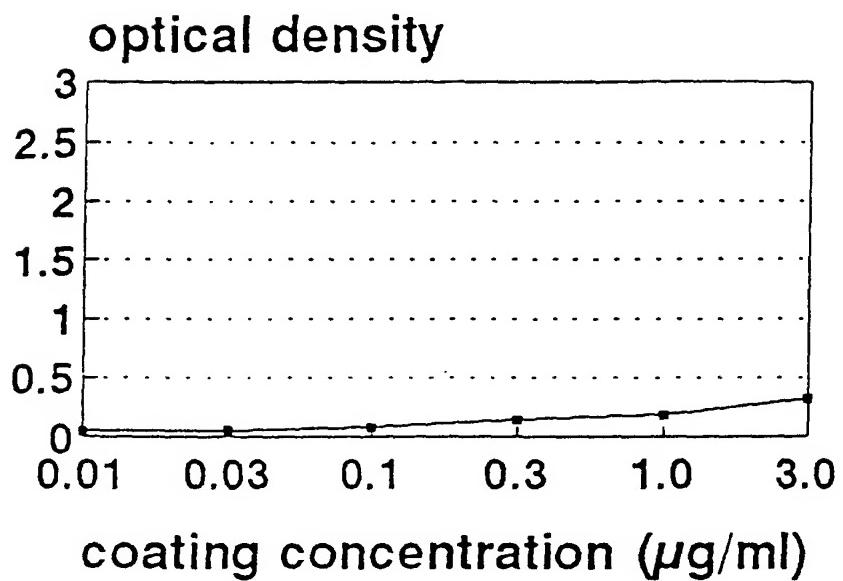
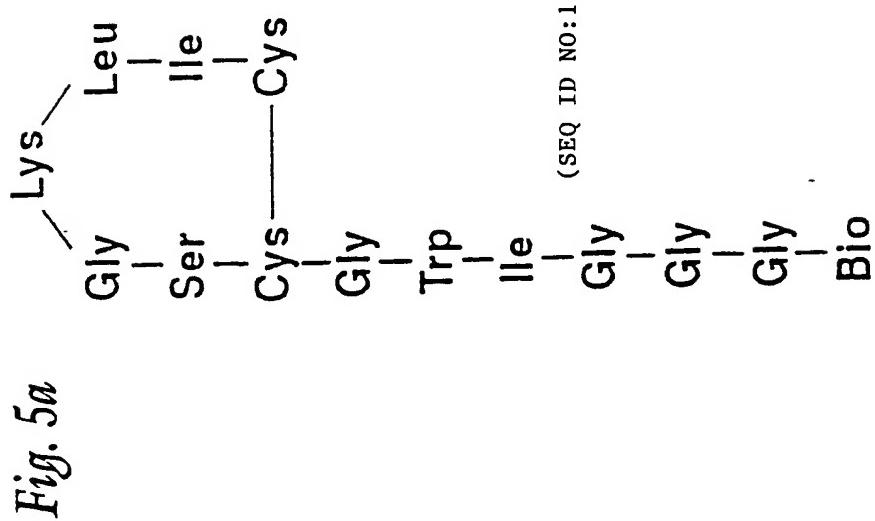


Fig. 4b



N-terminally biotinylated
TM peptide

C-terminally biotinylated
TM peptide

Fig. 6a-1

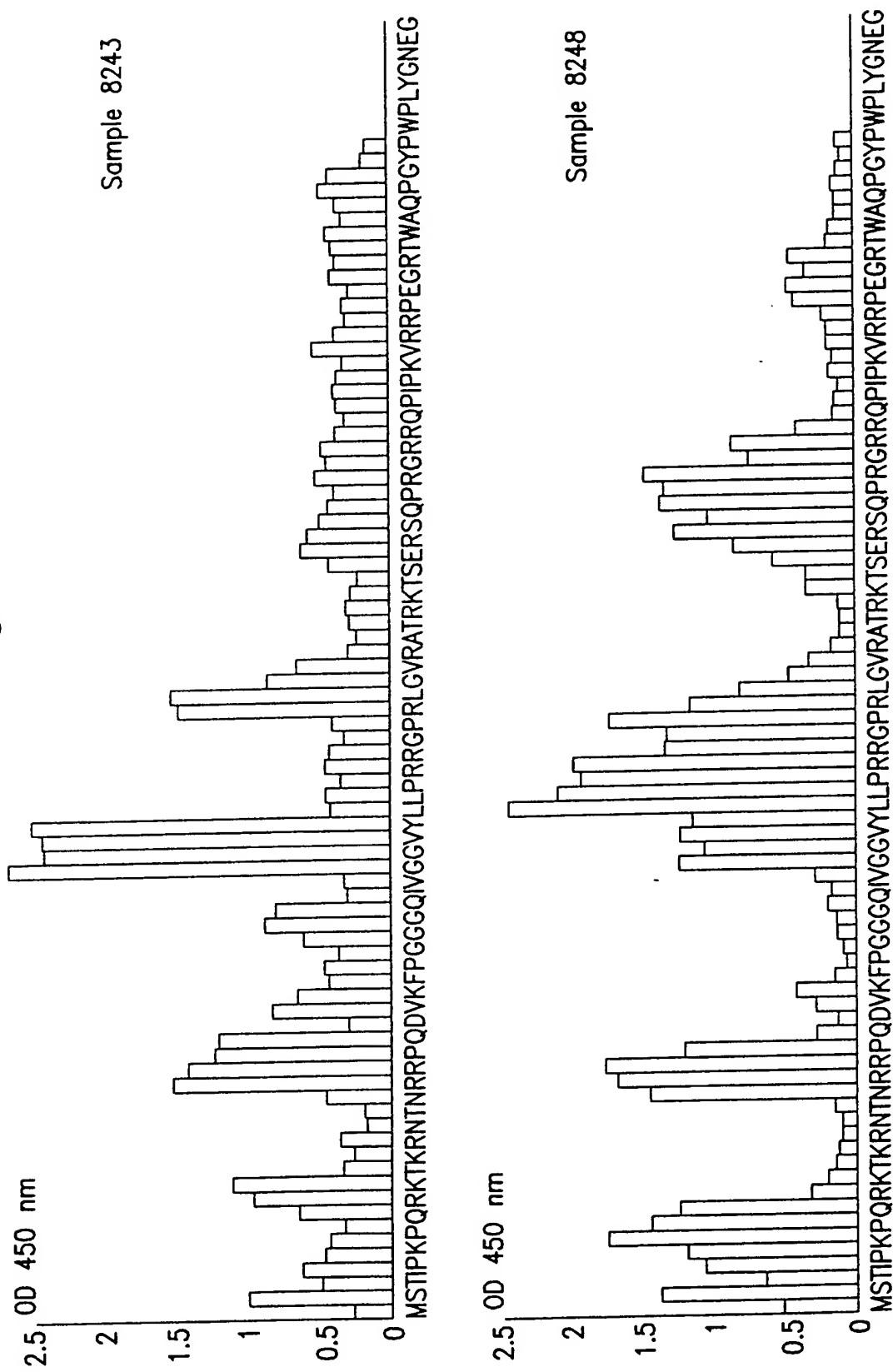


Fig. 6a-2

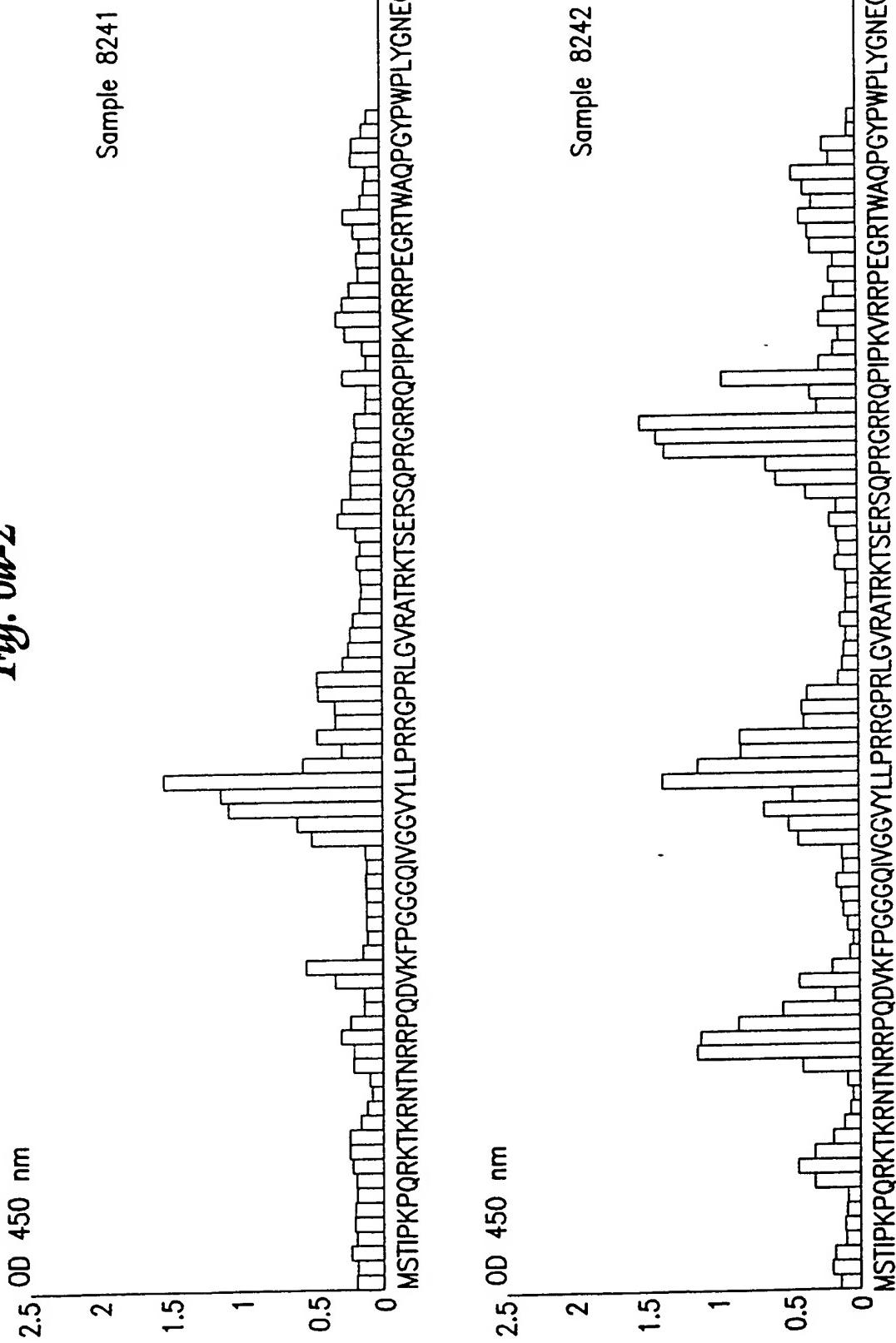


Fig. 6a-3

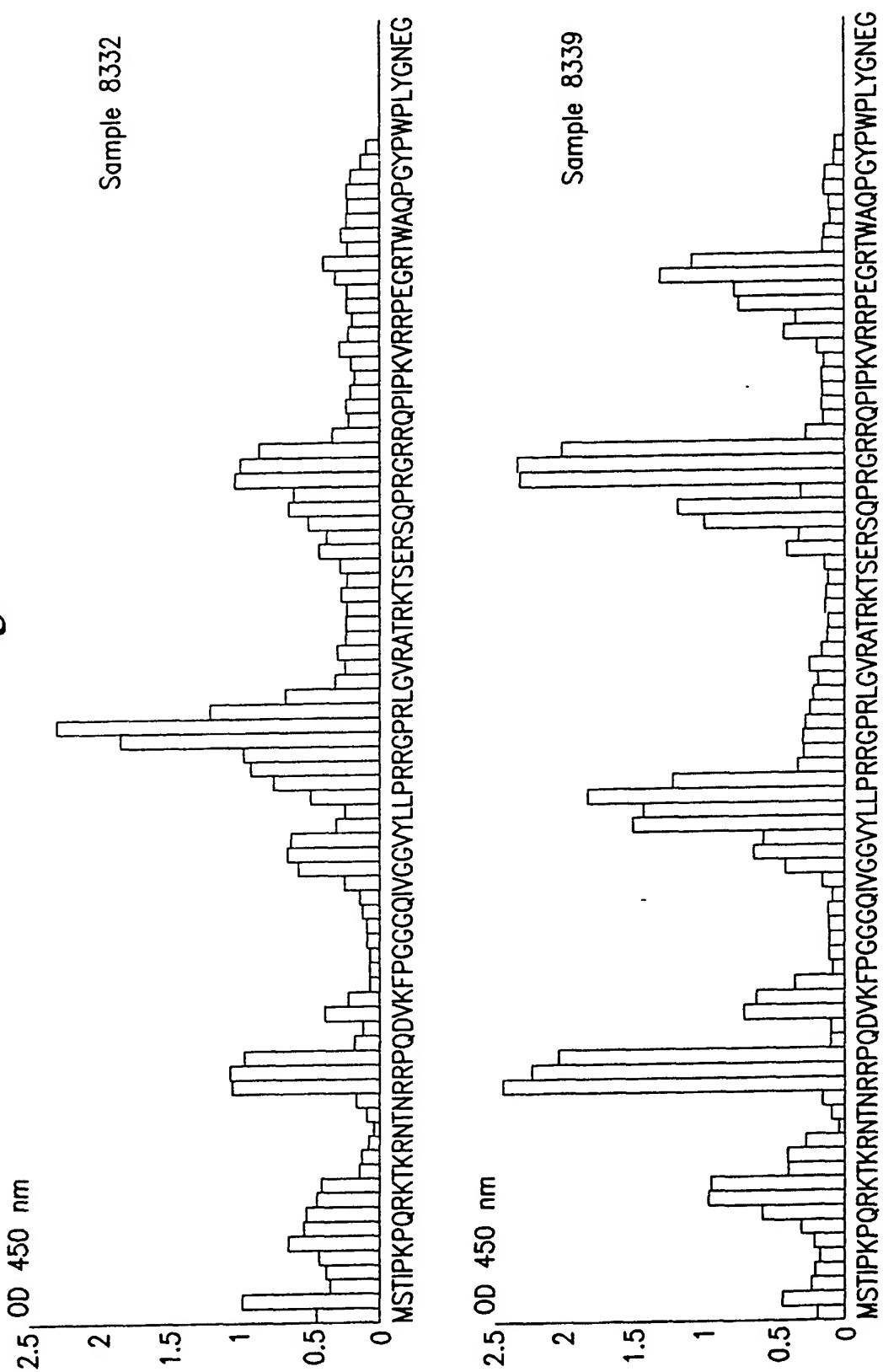


Fig. 6a-4

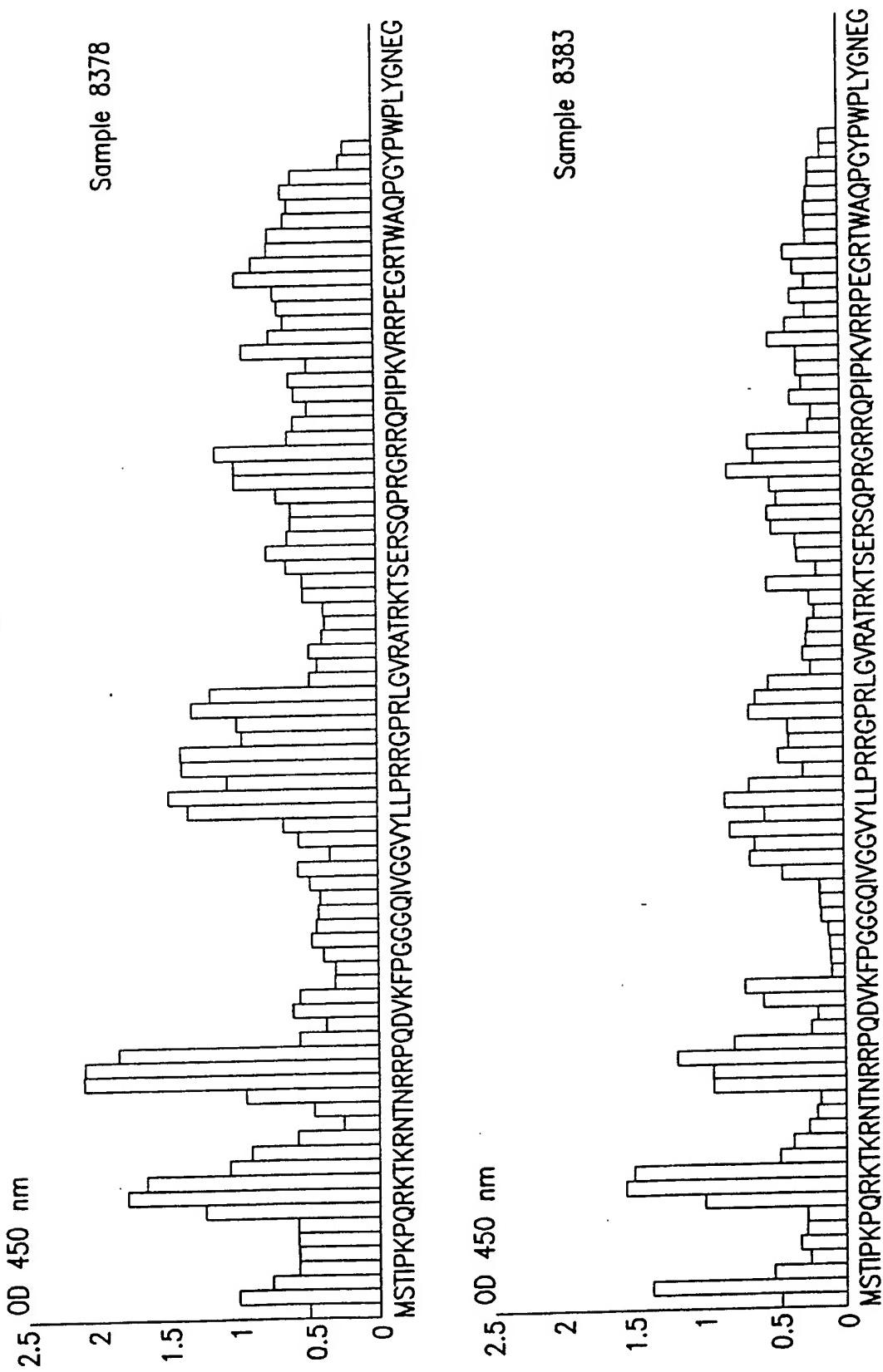


Fig. 6a-5

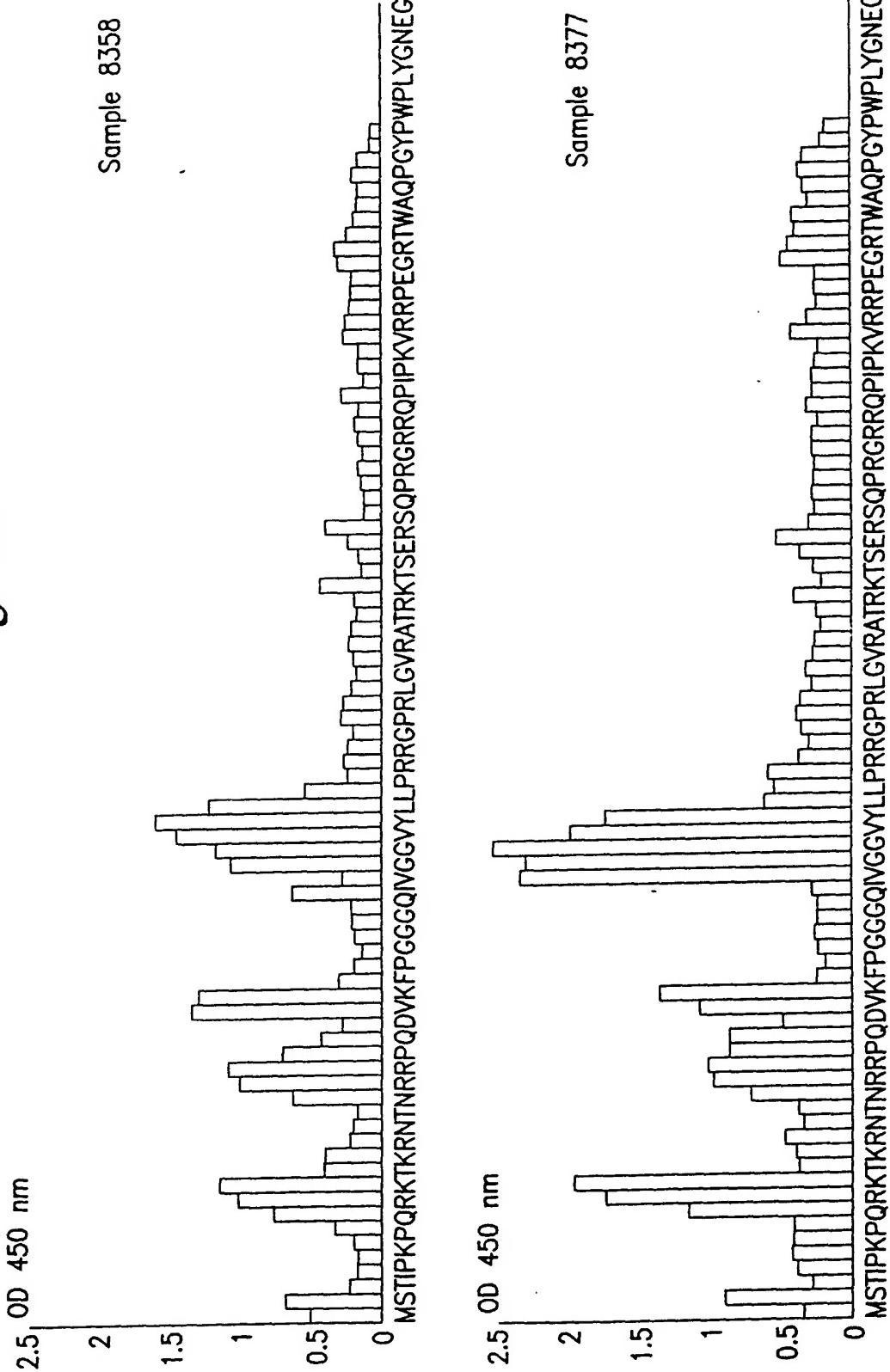


Fig. 6b-1

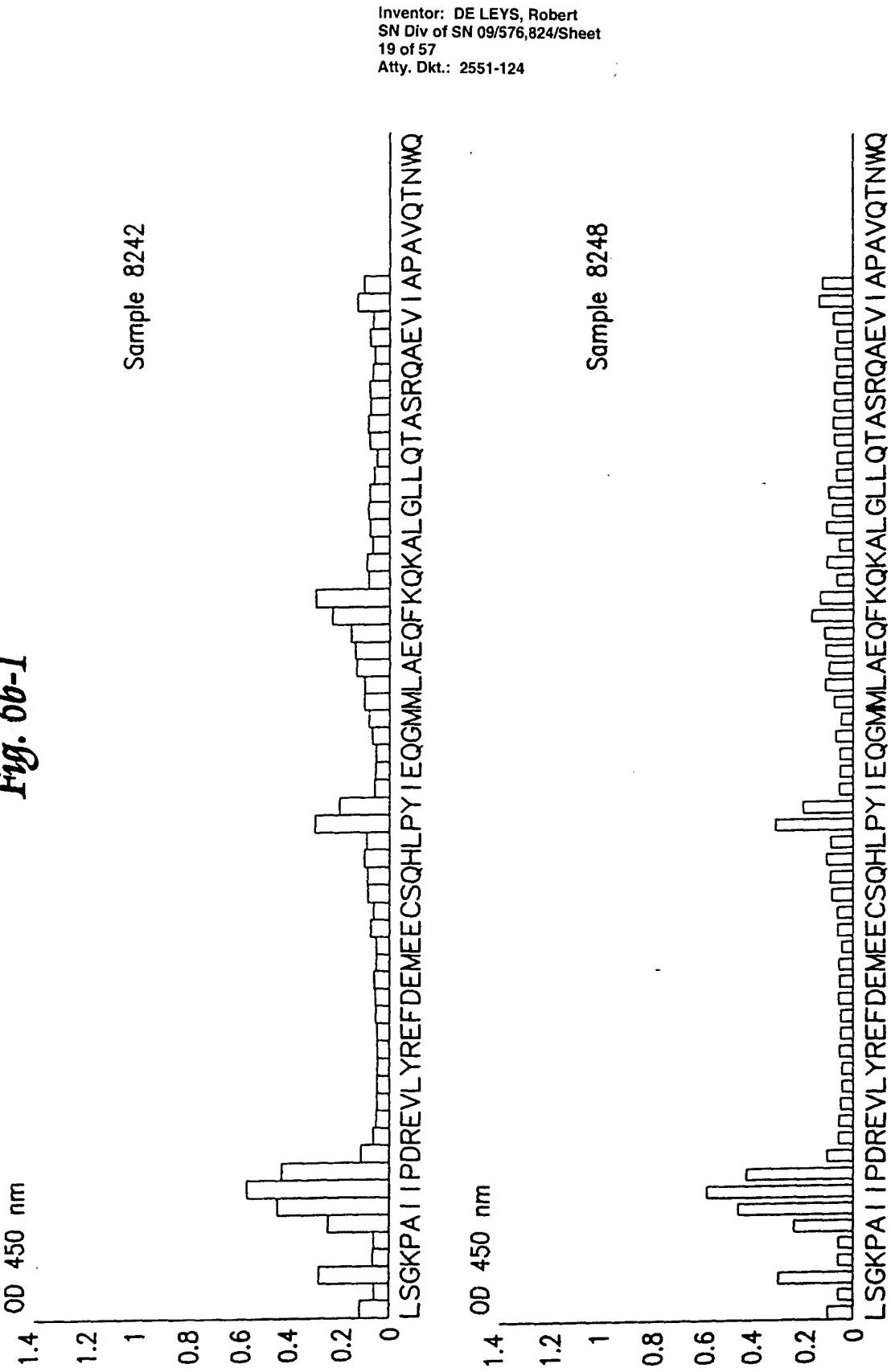


Fig. 6b-2

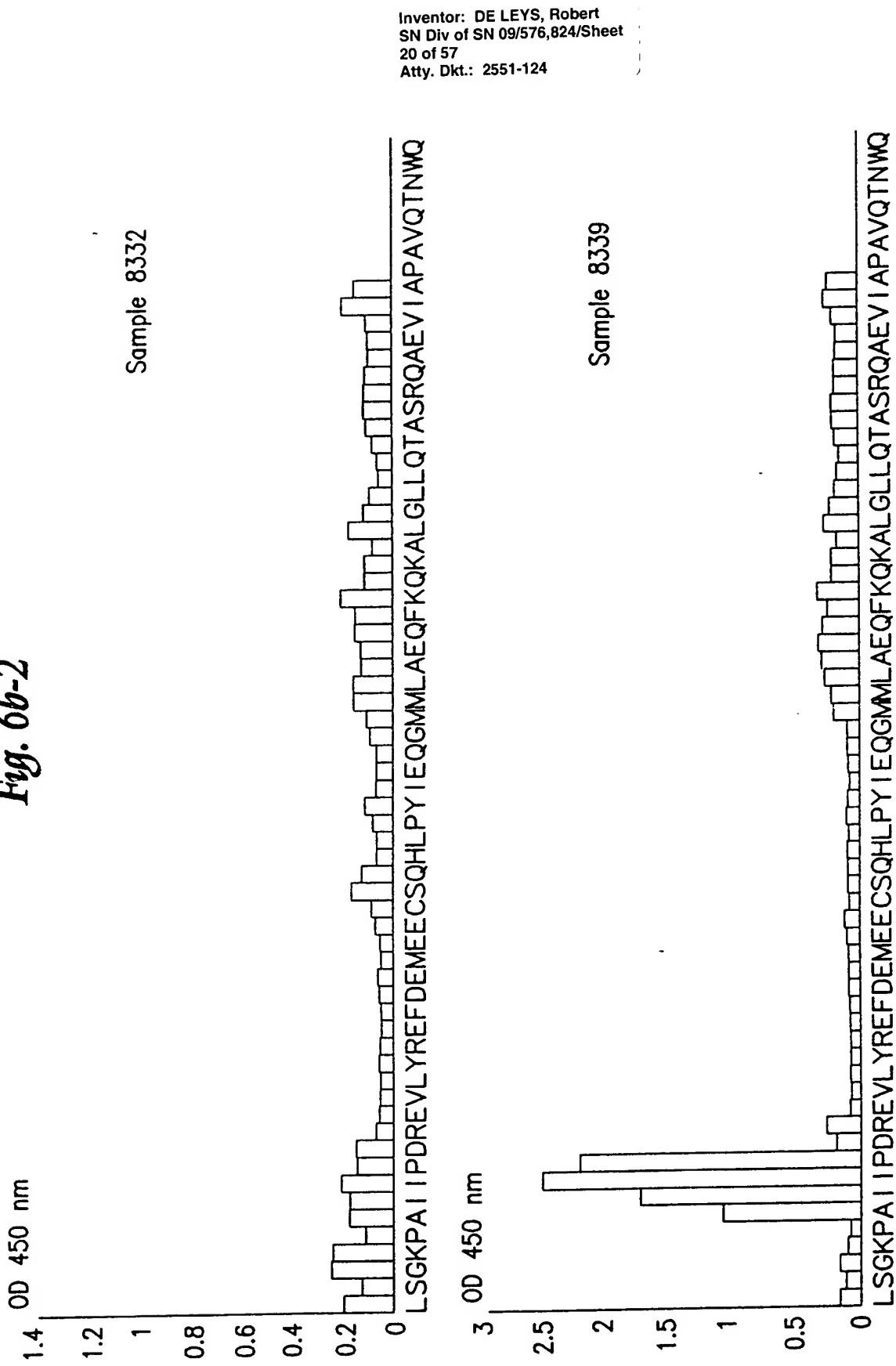


Fig. 6b-3

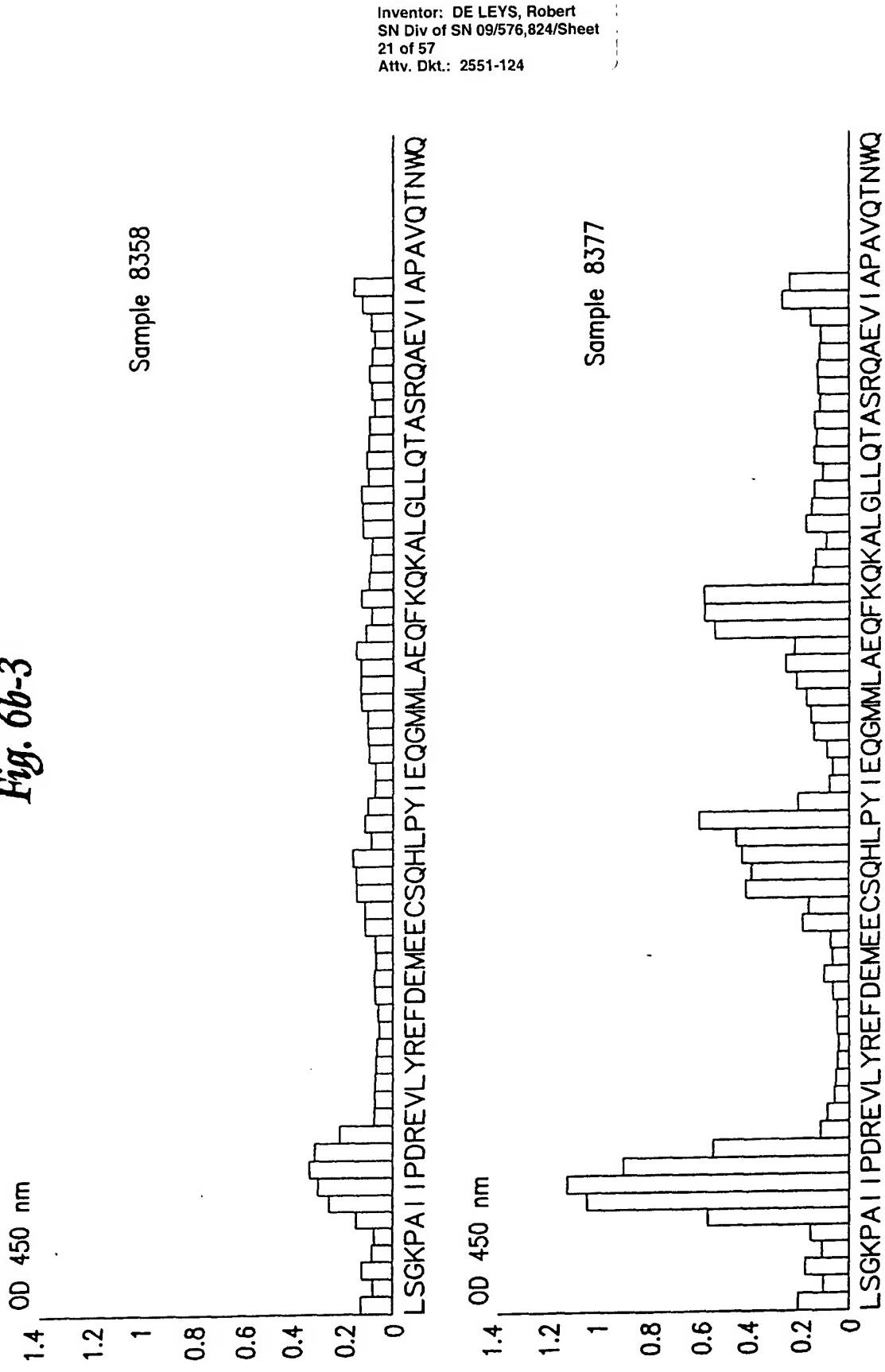


Fig. 6b-4

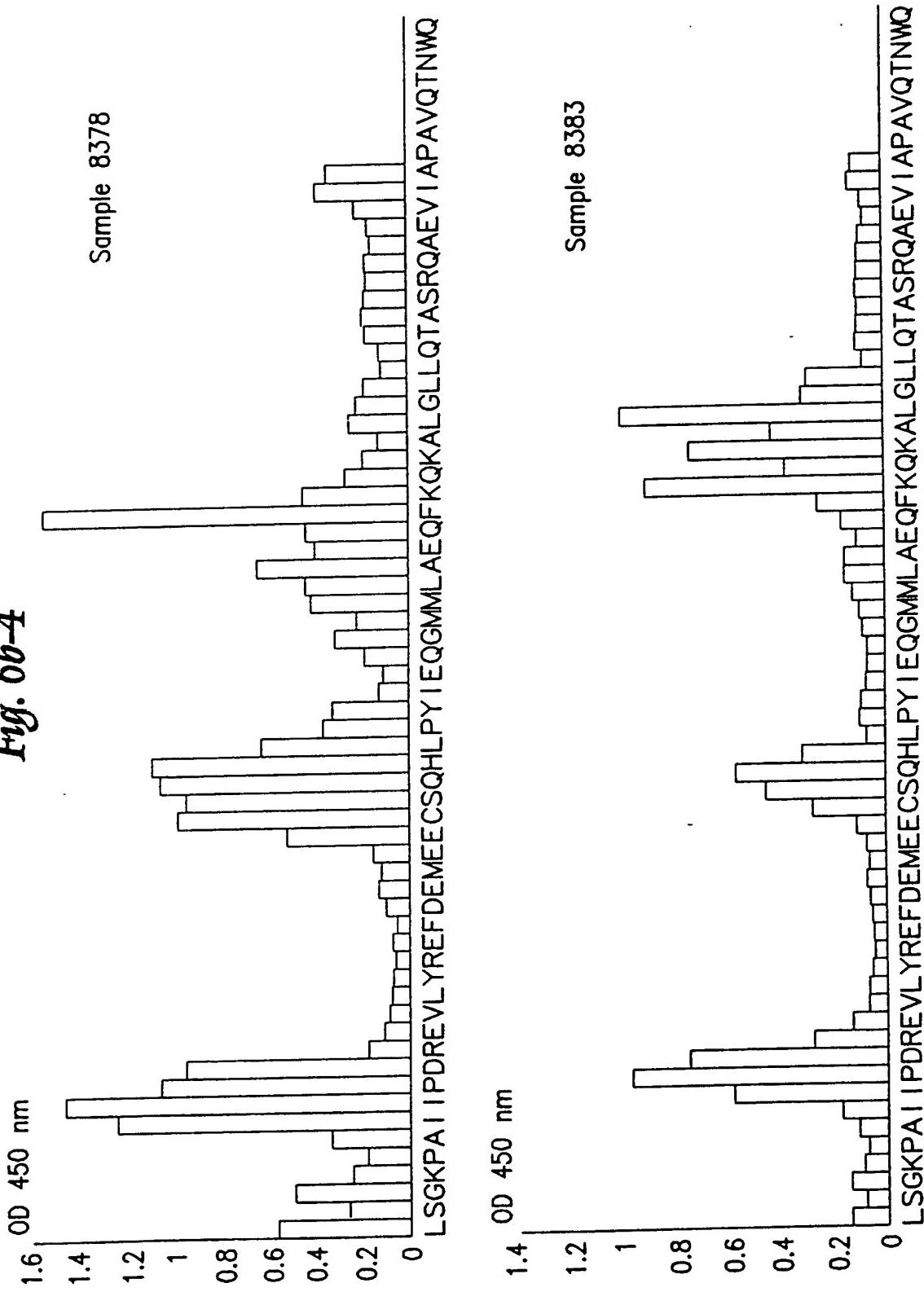


Fig. 6b-5

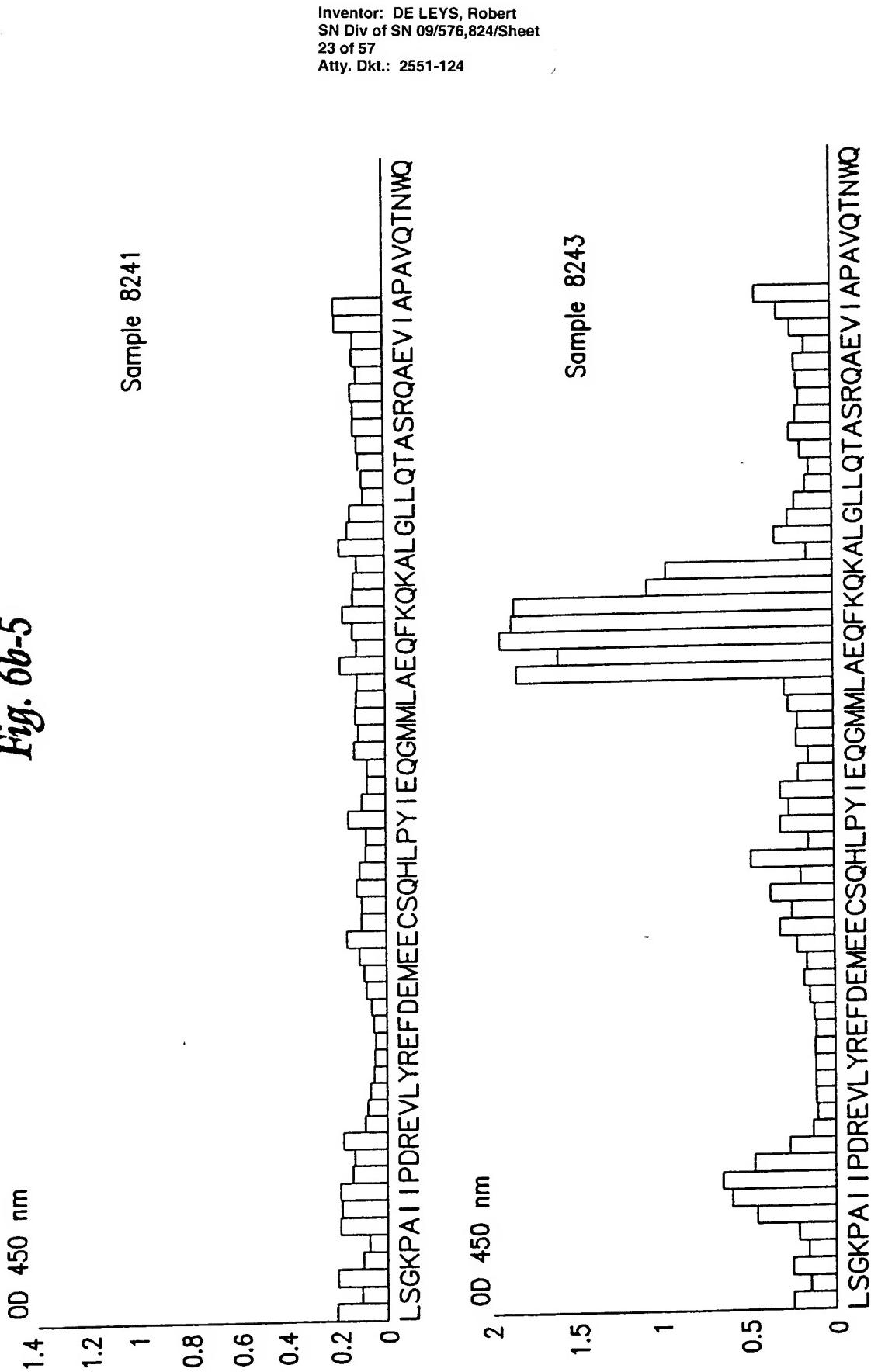


Fig. 6c-1

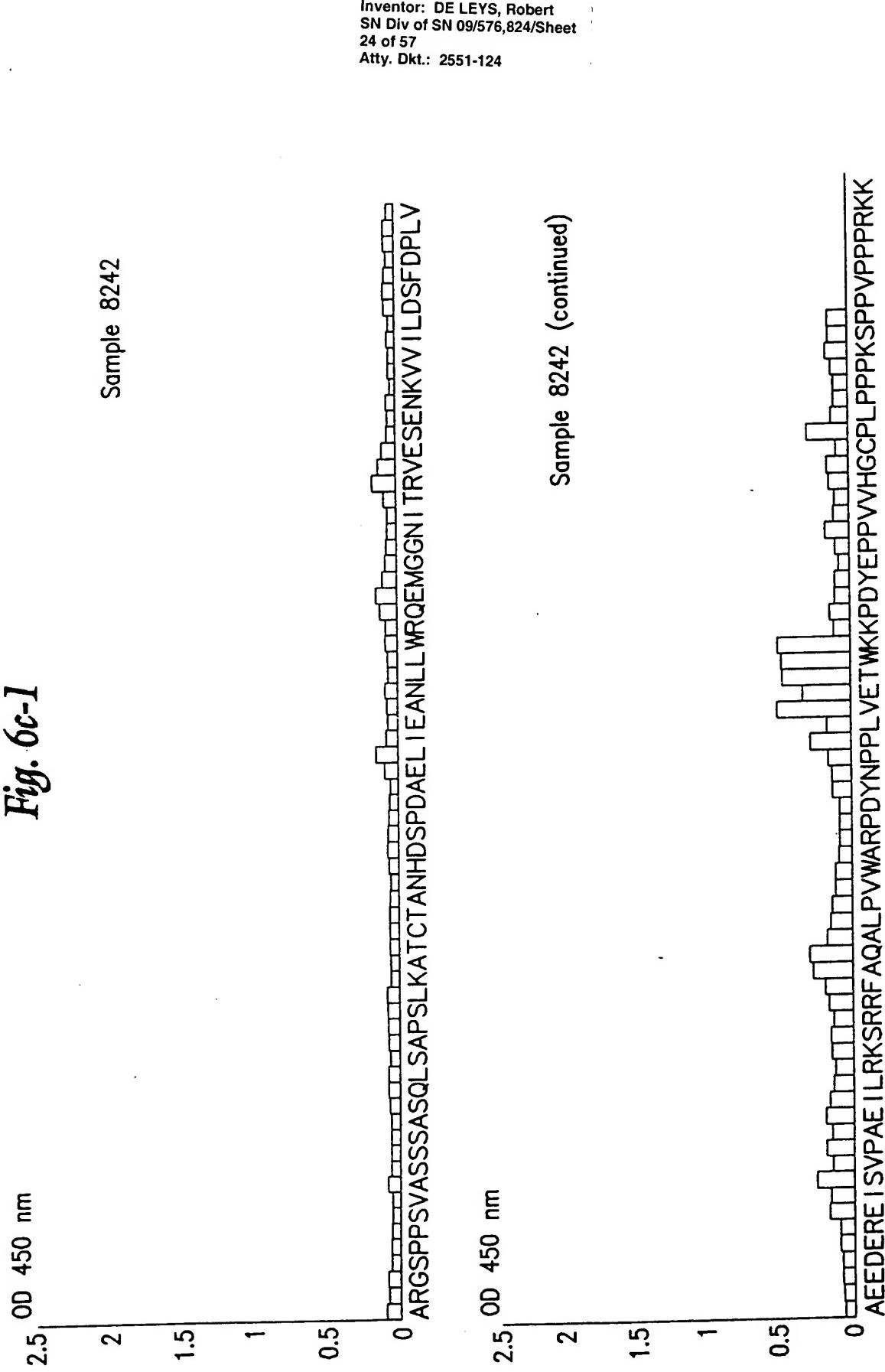


Fig. 6c-2

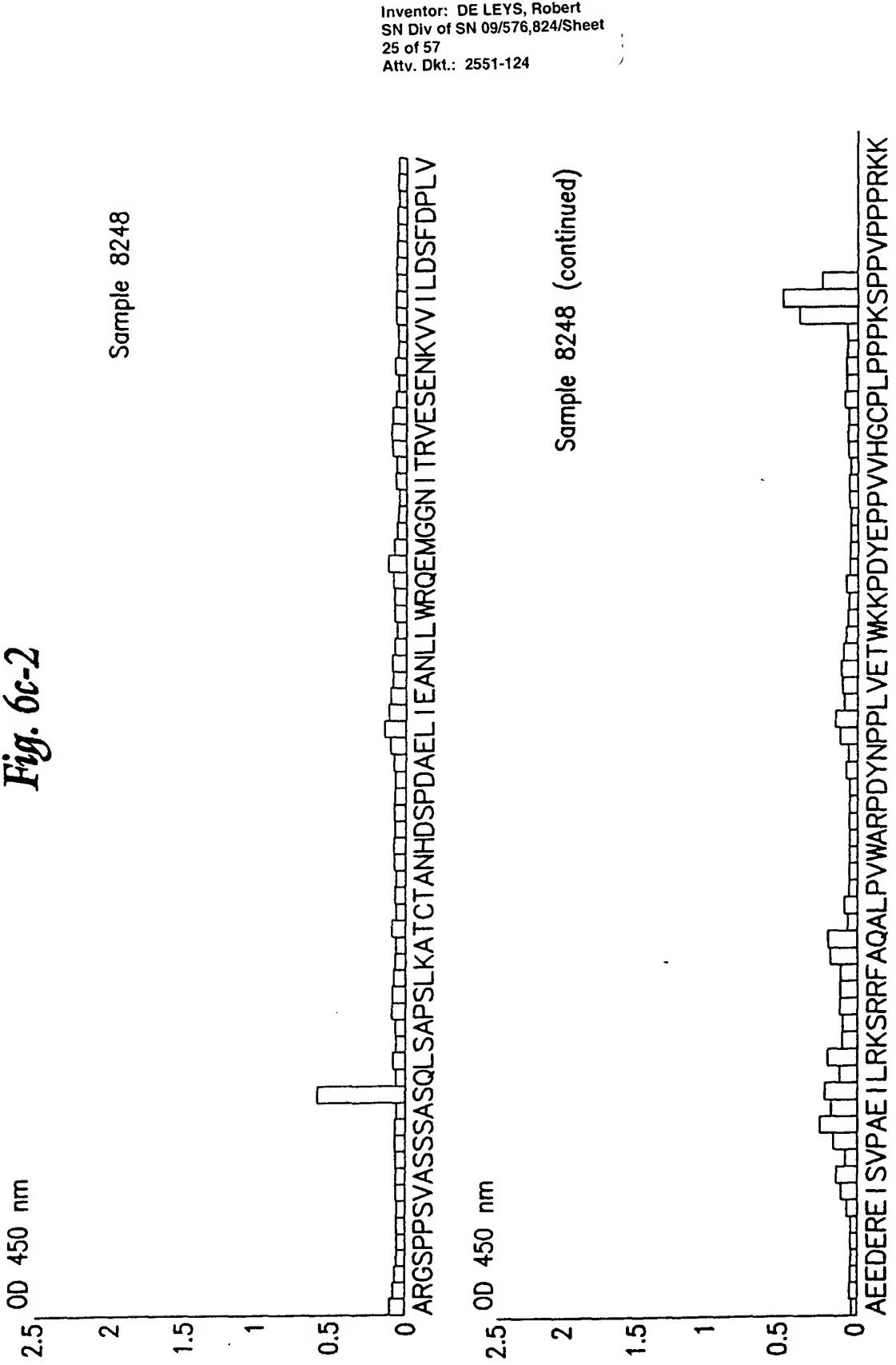


Fig. 6c-3

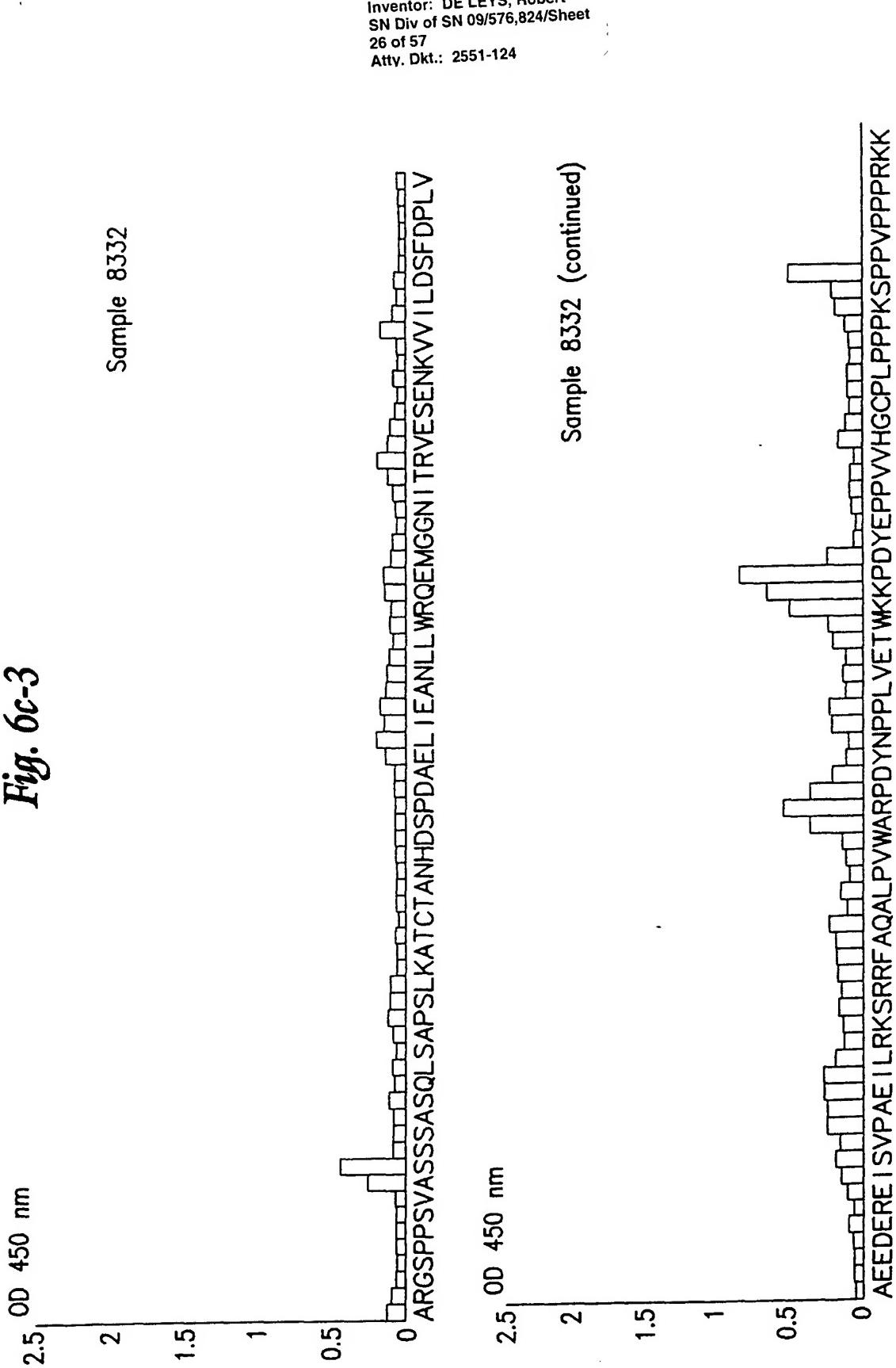


Fig. 6c-4

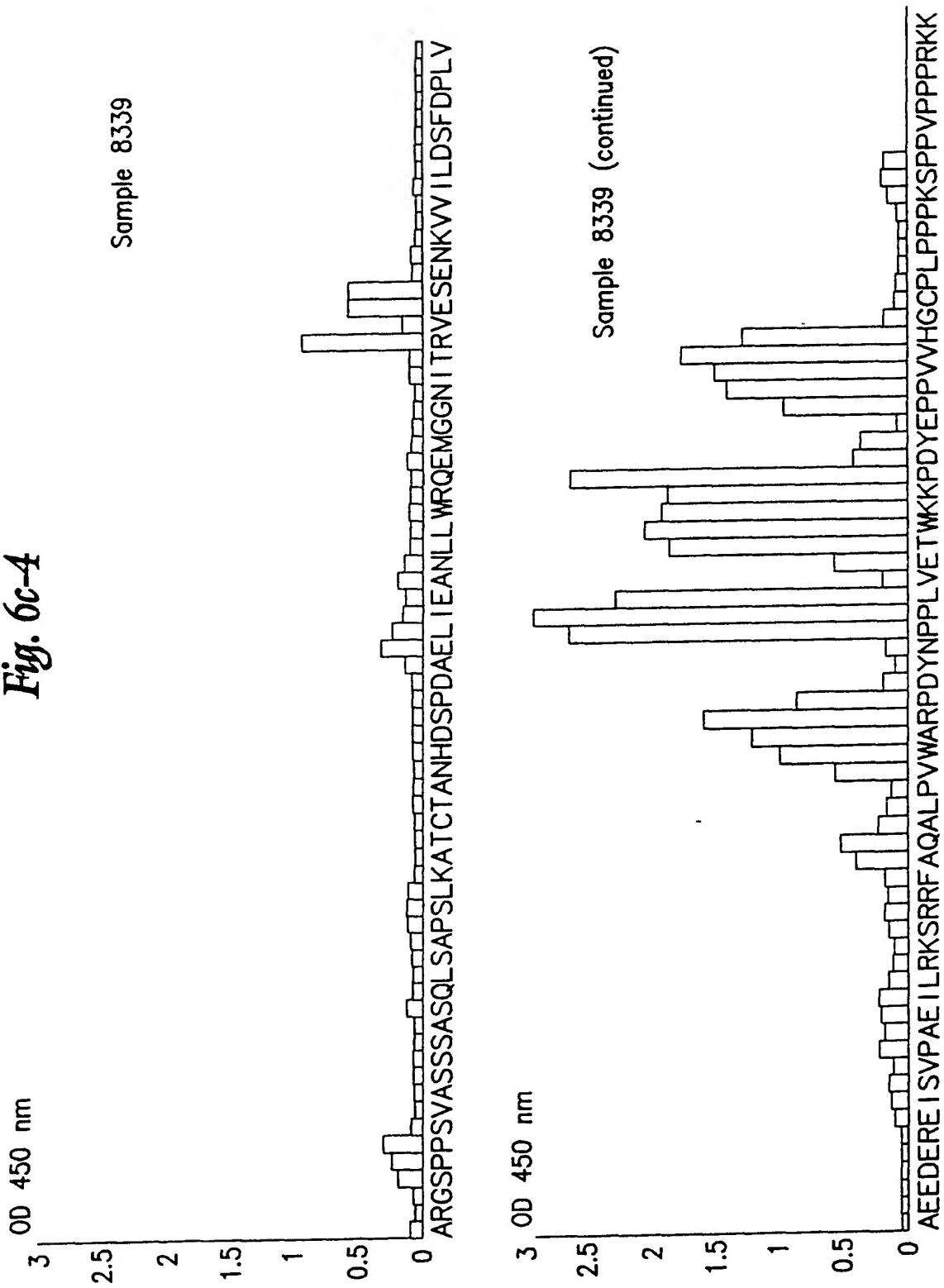


Fig. 6c-5

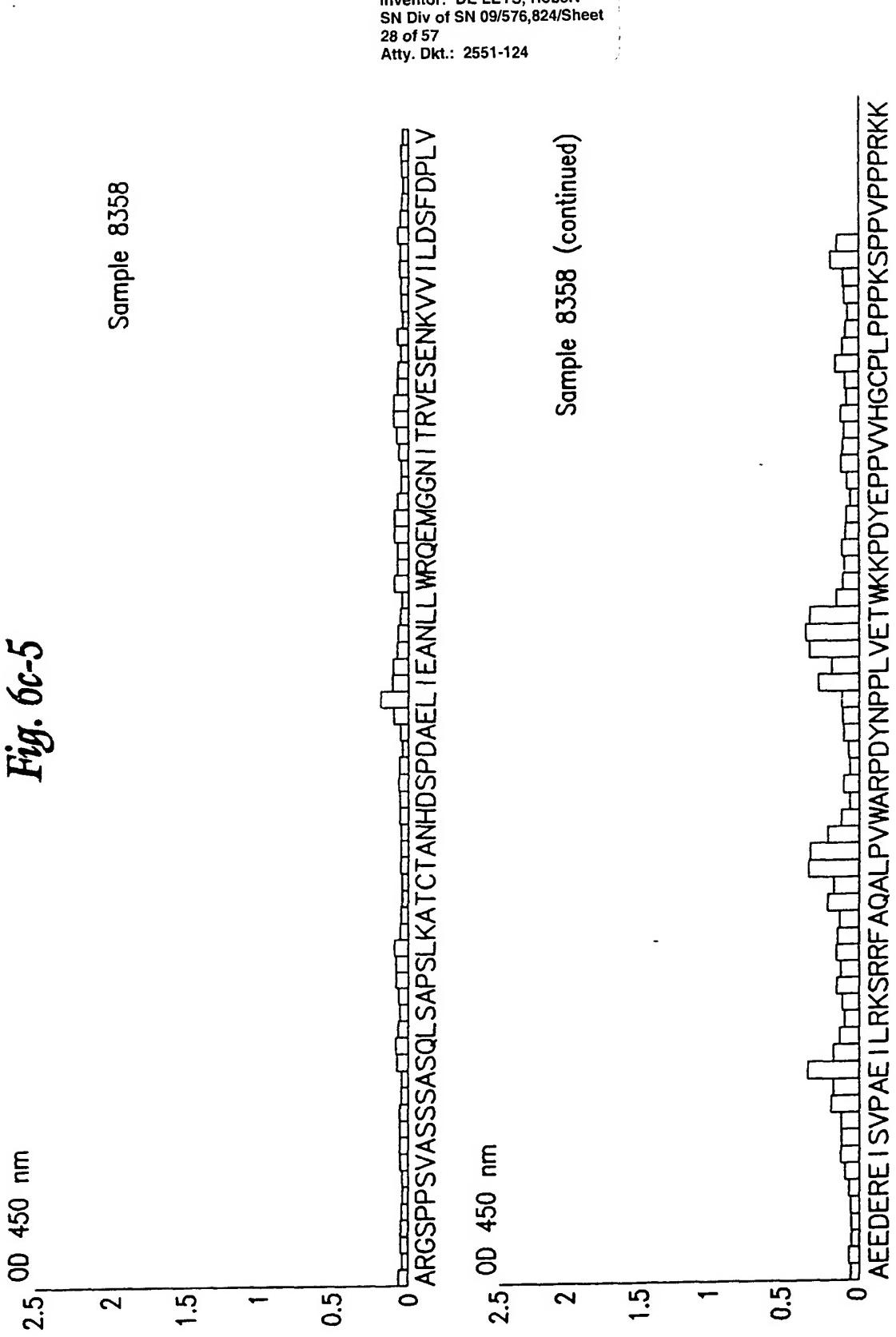


Fig. 6c-6

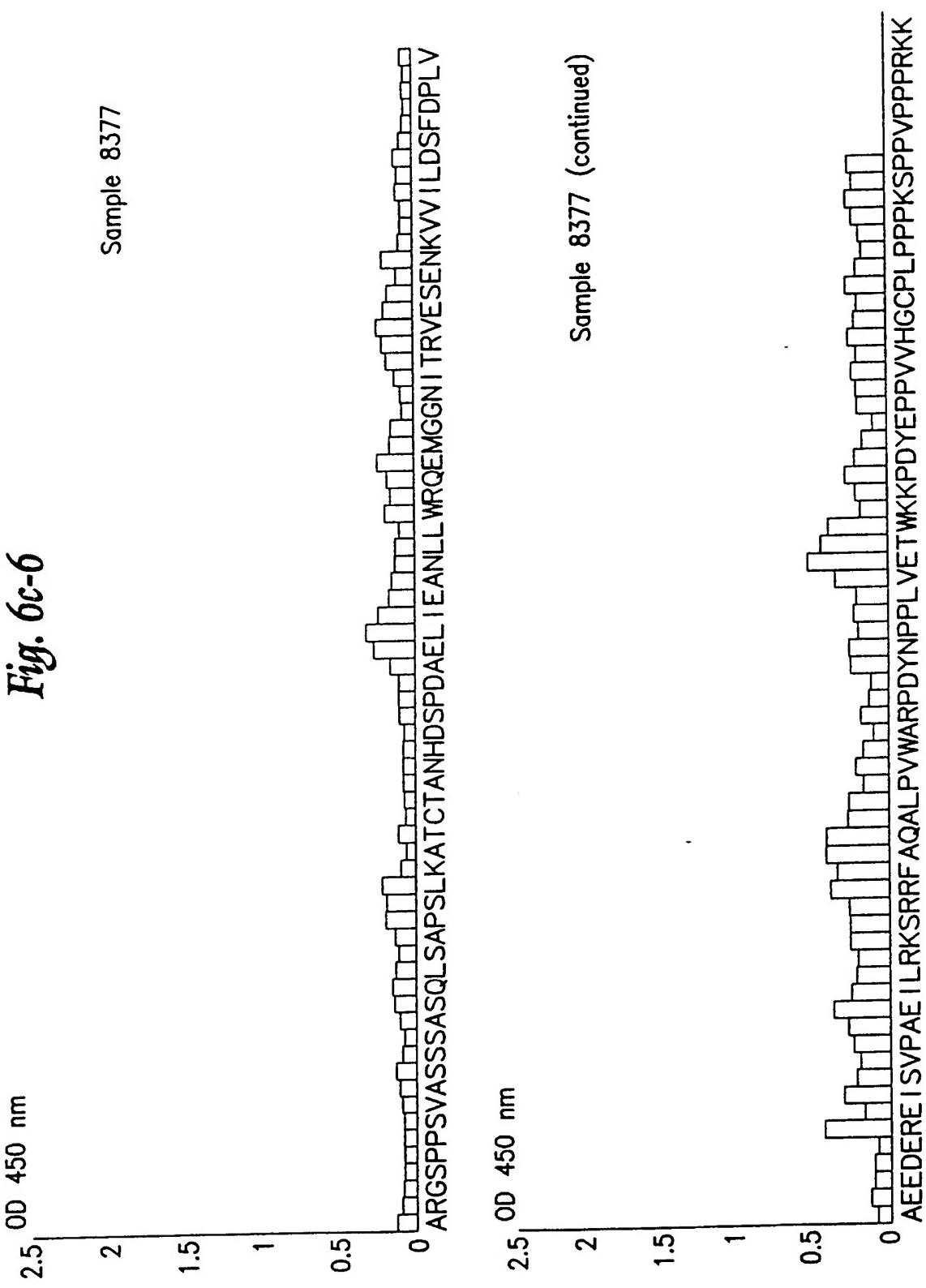


Fig. 6c-7

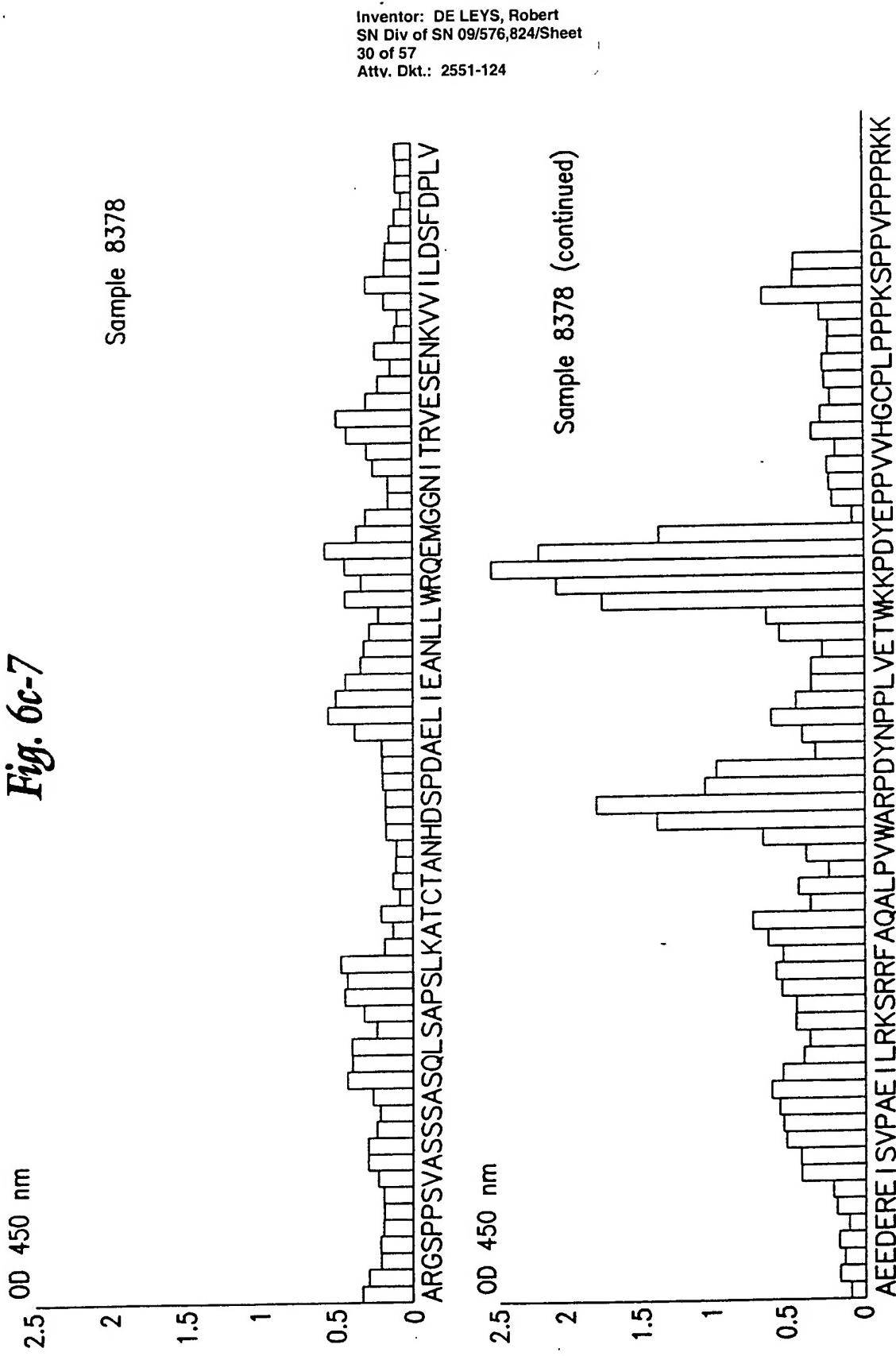


Fig. 6c-8

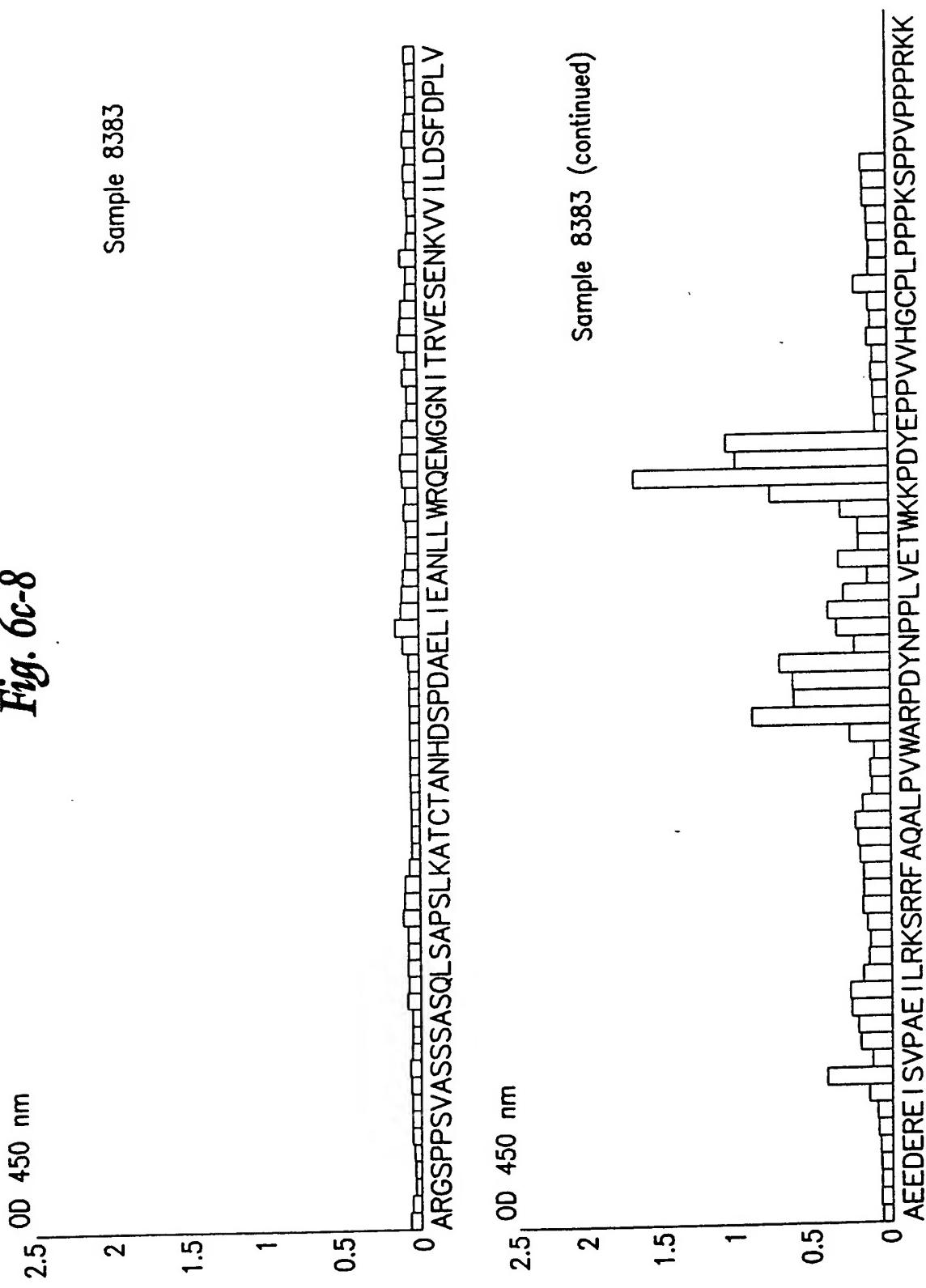


Fig. 6c-9

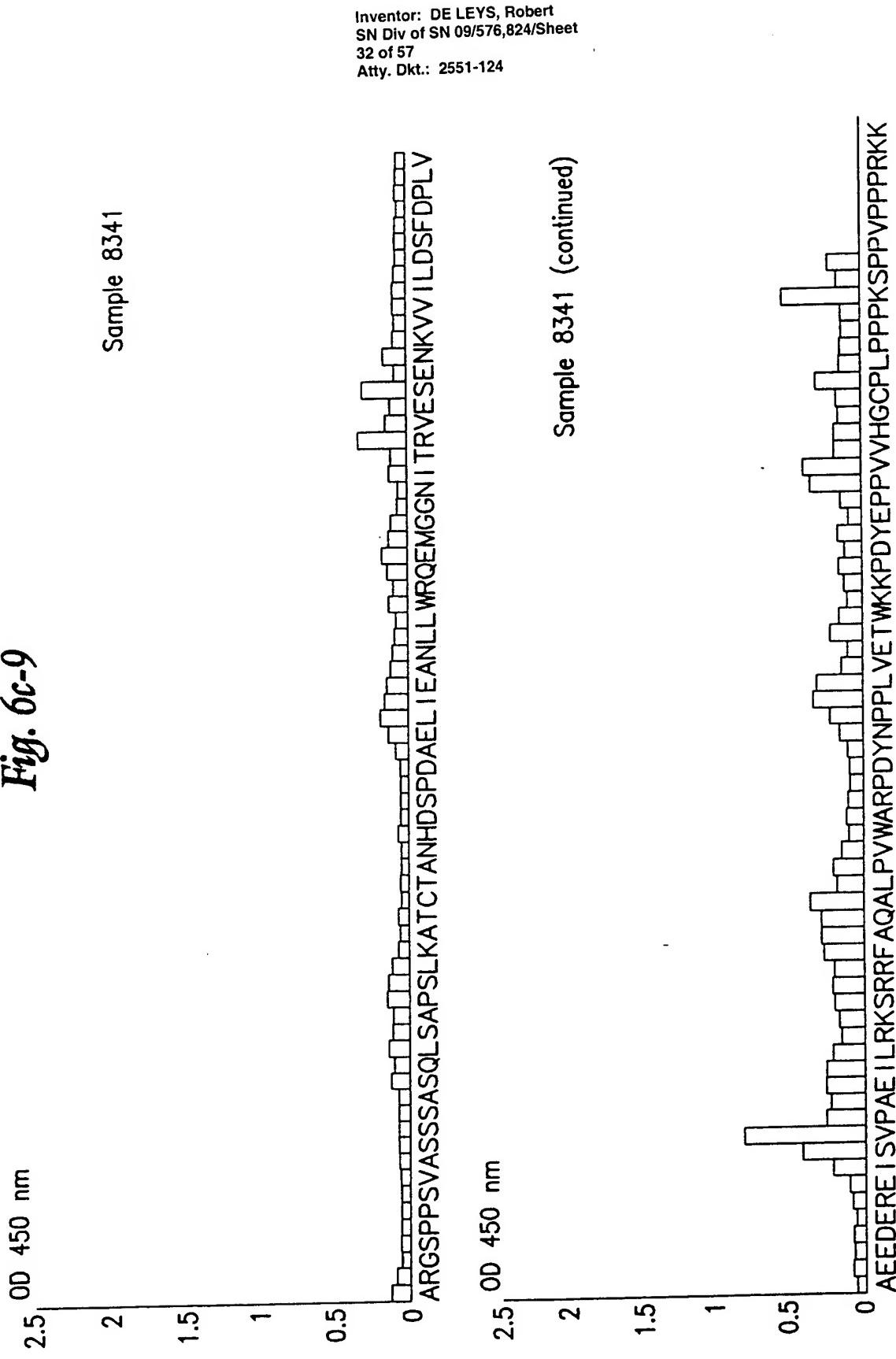


Fig. 6c-10

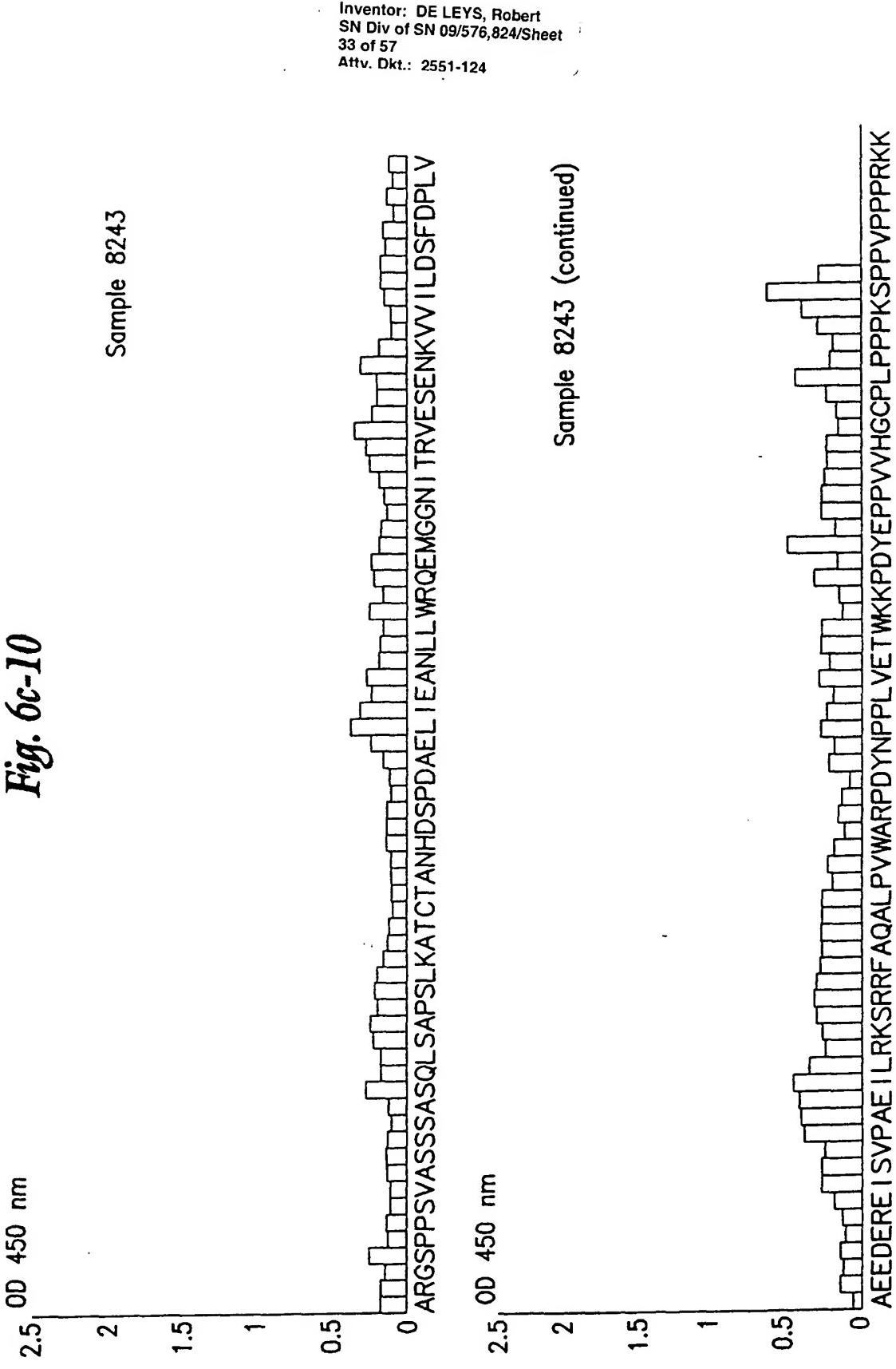


Fig. 7a-1

<u>Peptide I</u>	<u>Peptide II</u>	<u>Peptide III</u>
(SEQ ID NO:)	(SEQ ID NO:)	(SEQ ID NO:)
(178) MSTIPKPQR	(184) PQRKTKRNT	(190) RNTNRRPQD
(179) STIPKPQRK	(185) QRKTKRNTN	(191) NTNRRPQDV
(180) TIPKPQRKT	(186) RKTTKRNTNR	(192) TNRRPQDVK
(181) IPKPQRKT	(187) KTKRNTNRR	(193) NRRPQDVKF
(182) PKPQRKT	(188) TKRNTNRRP	(194) RRPQDVKF
(183) KPQRKT	(189) KRNTNRRPQ	(195) RPQDVKFPG
(184) PQRKTKRNT	(190) RNTNRRPQD	(196) PQDVKFPGG
(185) QRKTKRNTN	(191) NTNRRPQDV	(197) QDVKFPGGG
(186) RKTTKRNTNR	(192) TNRRPQDVK	(198) DVKFPGGGQ
(187) KTKRNTNRR	(193) NRRPQDVKF	(199) VKFPGGGQI
(188) TKRNTNRRP	(194) RRPQDVKF	(200) KFPGGGQIV
(189) KRNTNRRPQ	(195) RPQDVKFPG	(201) FPFGGGQIVG

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Peptide I MSTIPKPQRKTKRNTNRRPQ
 Peptide II PQRKTKRNTNRRPQDVKFPG
 Peptide III RNTNRRPQDVKFPFGGGQIVG

(SEQ ID NO:453)
 (SEQ ID NO:454)
 (SEQ ID NO:455)

Fig. 7a-2

Core 5
Peptide IV
Peptide V
Peptide VI

PGGGQIVGGVYLLPRRRGPRL (SEQ ID NO:456)

LPRRGPRRLGVRATRKTSERS (SEQ ID NO:457)

(SEQ ID NO:458) TRKTSERSQPRGRRQQPIPKV

(SEQ ID NO:459) RRQPIPCKVRRPEGRTWAQPG

Core 5	Peptide IV	Peptide V	Peptides VI
(SEQ ID NO:)	(SEQ ID NO:)	(SEQ ID NO:)	(SEQ ID NO:)
(202) PGGGQIVGG (214) LPRRGPRLG (226) TRKTSERSQ	RRQPIPCKV (238)	RKTTSERSQP	RQPIPCKVRR
(203) GGGQIVGGV (215) PRRGPRRLGV (227) KTSERSQPR	QPIPCKVRRP	KTSERSQPR (240)	QPIPCKVRRP
(204) GGQIVGGVY (216) RRGPRRLGVR (228) TSERSQPRG	PIPCKVRRPE	TSERSQPRG (241)	PIPCKVRRPE
(205) GQIVGGVYL (217) RGPRRLGVRA (229) SERSQPRGR	IPKVRRPEG	SERSQPRGR (242)	IPKVRRPEG
(206) QIVGGVYLL (218) GPRLGVRAT (230) ERSQPRGR	PKVRRPEGR	ERSQPRGR (243)	PKVRRPEGR
(207) IVGGVYLLP (219) PRLGVRATR (231) RSQPRGR	KVRRPEGRT	RSQPRGR (244)	KVRRPEGRT
(208) VGGVYLLPR (220) RLGVRA TRK (232) SQPRGRRQ	VRRPEGRTW	SQPRGRRQ (245)	VRRPEGRTW
(209) GGVYLLPQR (221) LGVRATRKT (233) QPRGRRQ	RRPEGRTWA	QPRGRRQ (246)	RRPEGRTWA
(210) GVYLLPQRG (222) GVRATRKTS (234) PRGRRQ	RPEGRTWAQ	PRGRRQ (247)	RPEGRTWAQ
(211) VYILLPQRGP (223) VRATRKTS (235) RGRRQQ	PEGRTWAQP	RGRRQQ (248)	PEGRTWAQP
(212) YLLPQRGP (224) RATRKTSER (236) GRRQPIP	EGRTWAQPG	GRRQPIP (249)	EGRTWAQPG
(213) LLPRRGPRL (225) ATRKTSERS (237)			

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Fig. 7n-3

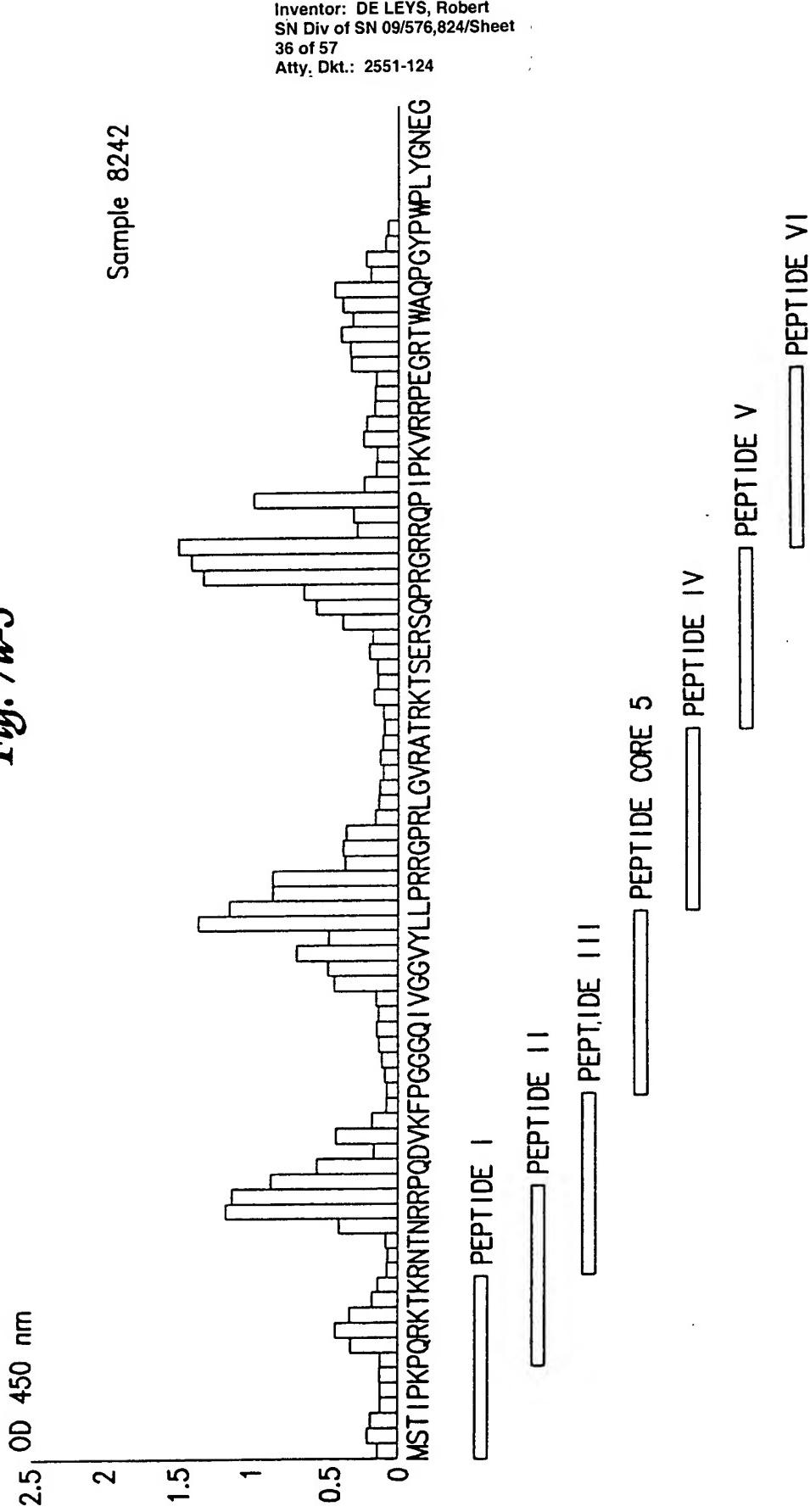


Fig. 7b-1

HCV1	LSGKPAIIPDREVLYREFDE	(SEQ ID NO:460)
HCV2	IIPDREVLYREFDEMEECSQ	(SEQ ID NO:460)
HCV3	VLYREFDEMEECSQHLPYIE	(SEQ ID NO:462)
HCV4	DEMEECSQHLPYIEQGMMLA	(SEQ ID NO:463)
HCV5	SQHLPYIEQGMMLAEQFKQK	(SEQ ID NO:464)
HCV6	IEQGMMLAEQFKQKALGLLQ	(SEQ ID NO:465)

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<u>HCV1</u>	<u>HCV2</u>	<u>HCV3</u>	<u>HCV4</u>	<u>HCV5</u>	<u>HCV6</u>
(SEQ ID NO:) (258) LSGKPAIIP 264ITIPDREVLY (259) SGKPAIIPD 265ITIPD (260) GKPAIIPDR 266PDR (261) KPAIIPDRE 267DREVLYREF (262) PAIIPDREV 268 REVLYREFD (263) AIIIPDREVL 269 EVLYREFDE (264) IIPDREVLY 270 VLYREFDEM (265) IPDREVLYR 271 LYREFDEME (266) PDREVLYRE 272 YREFDEMEE (267) DREVLYREF 273 REFDEMEEC (268) REVLYREFD 274 EFDEMEECS (269) EVLYREFDE 275 FDEMEECSQ	(SEQ ID NO:) (270VLYREFDEM 276 DEMEECSQH 271LYREFDEM 277 EMEEC 272YREFDEMEE 278 MEECSQHLP 273REFDEMEEC 279 EEC 274EFDEMEECS 280 EC 275FDEMEECSQ 281 CSQHLPYIE 276DEMEECSQH 282 SQHLPYIEQ 277EMEECSQH 283 QHL 278MEEC 279EECSQHLPY 285 LPY 280ECSQHLPY 286 PYIEQGMML 281CSQHLPYIE 287 YIEQGMMLA 282SQHLPYIEQ 288 IEQGMMLAE 283QHL 289EQGMMLAEQ 284HLPYIEQGM 290QGMMLAEQ 285LPYIEQGM 291GMMLAEQFK 286PYIEQGMML 292MMMLAEQFK 287YIEQGMMLA 293MLAEQFKQK 288IEQGMMLAE 294LAEQFKQKA 289EQGMMLAEQ 295AEQFKQKAL 290QGMMLAEQF 296EQFKQKALG 291GMMLAEQFK 297QFKQKALGL 292MMMLAEQFKQ 298FKQKALGLL 293MLAEQFKQK 299KQKALGLLQ	(SEQ ID NO:) (288IEQGMMLAEQ 289EQGMMLAEQ (289EQGMMLAEQF 290QGMMLAEQF (290QGMMLAEQ 291GMMLAEQFK (291GMMLAEQFK 292MMMLAEQFK (292MMMLAEQFKQ 298FKQKALGL (293MLAEQFKQK 299KQKALGLLQ			

Fig. 7b-2

HCV7	LAEQFKQKALGLLQQTASRQA (SEQ ID NO:466)
HCV8	QKALGLLQQTASRQAEVIAPA (SEQ ID NO:467)
HCV9	LQTASRQAEVIAPAVQTNNWQ (SEQ ID NO:468)

HCV7

HCV8

HCV9

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(SEQ ID NO:)	(SEQ ID NO:)	(SEQ ID NO:)
(294) LAEQFKQKA	OKALGLLQQT	LQTASRQAE
(295) AEQFKQKAL	KALGLLQTA	QTASRQAEV
(296) EQFKQKALG	ALGLLQTAS	TASRQAEVI
(297) QFKQKALGL	LGLLQTASR	ASRQAEVIA
(298) FKQKALGLL	GLLQTASRQ	SRQAEVIAPI
(299) KQKALGLLQ	LLQTASRQA	RQAEVIAPA
(300) QKALGLLQT	LQTASRQAE	QAEVIAPAV
(301) KALGLLQTA	QTASRQAEV	AEVIAPAVQ
(302) ALGLLQTAS	TASRQAEVI	EVIAPAVQT
(303) LGLLQTASR	ASRQAEVIA	VIAPAVQTN
(304) GLLQTASRQ	SRQAEVIAPI	TAPAVQTNW
(305) LLQTASRQA	RQAEVIAPA	APAVQTNWQ

Fig. 7b-3

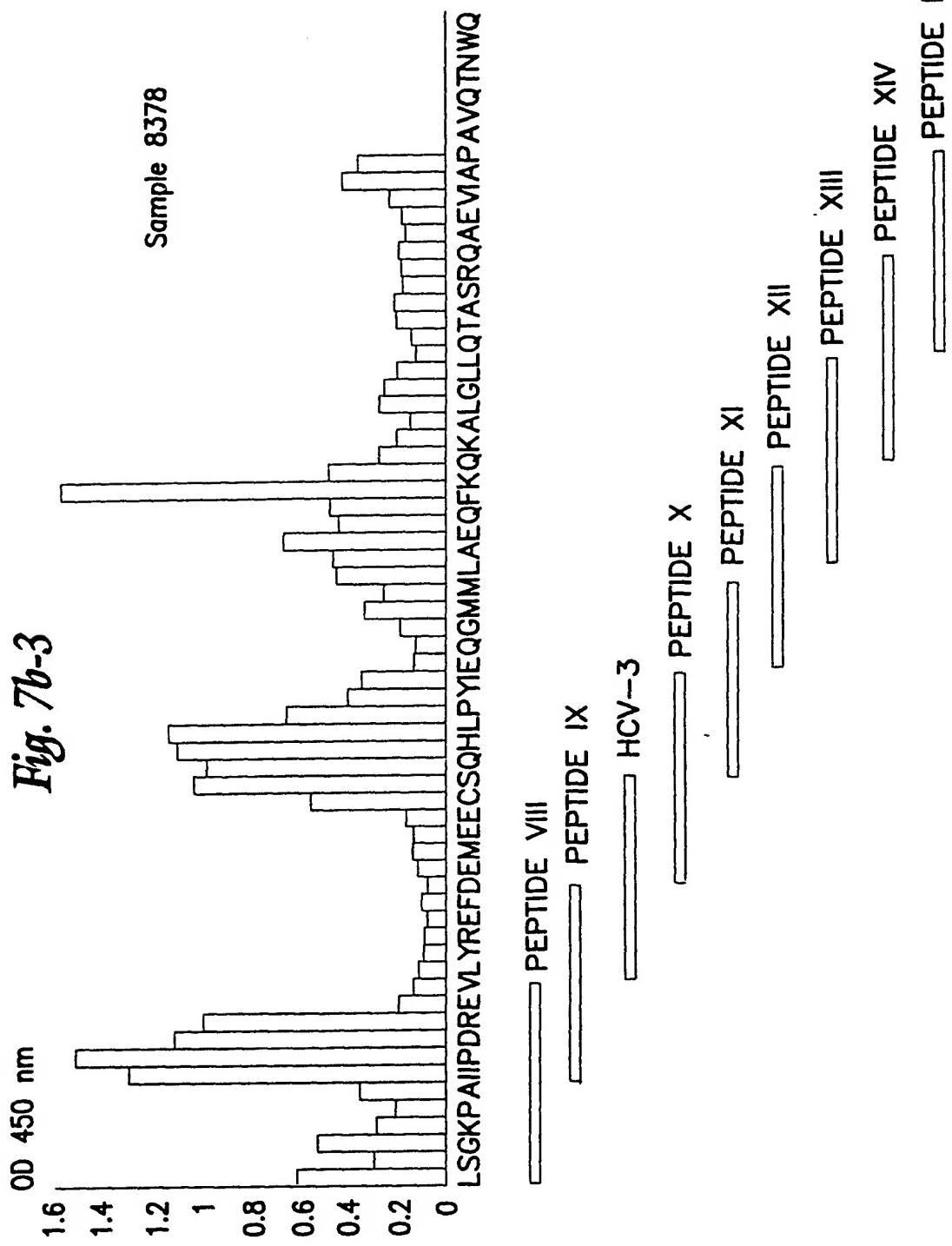


Fig. 7c-1

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SEQ ID NO: 318 GNITRYESE 330VILDSDPLVAEEEDEREI SVP (SEQ ID NO:469)	SEQ ID NO: 319 NITRYESEN 331ILDSDPLV 343DEREISVPA 354EDEREISVPA 342EDEREISVPA 355RKSRFAQ 366VWARPDYNP	SEQ ID NO: 320 ITTRYESENK 332LDSDPLVA 344EREISVPAE 356KSRRFAQAL 367WARPDYNPP	SEQ ID NO: 321 TRYESENKV 333DSDFDPLVAE 345REISVPAEI 357SRRFAQALP 368ARPDPNPLV	SEQ ID NO: 322 RYESENKV 334SDFDPLVAEE 346EISVPAEIL 358RRFAQALPV 369RPDPNPLV	SEQ ID NO: 323 YESENKVV 335FDPLVAEED 347ISVPAEILR 359RFAQALPVW 371DYNPLVET	SEQ ID NO: 324 ESENKVVIL 336DPLVAEEDE 348SVPAAEILRK 360FAQALPVWA 372YNPPLVETW	SEQ ID NO: 325 SENKVVILD 337PLVAEEEDER 349VPAEILRK 361AQALPVWAR 373NPPLVETWK	SEQ ID NO: 326 ENKVVILDS 338LVAEEEDERE 350PAEILRKSR 362QALPVWARP 374PPLVETWKK	SEQ ID NO: 327 NKVVILDSF 339VAEEDEREI 351AEILRKSR 363ALPVWARPD 375PLVETWKKP	SEQ ID NO: 328 KVVILDSFD 340AEEEDEREIS 352EILRKSR 364LPVWARPDY 376LVETWKKPD	SEQ ID NO: 329 VVILDSFDP 341EEDEREISV 353ILRKSR 365PVWARPDYN 377VETWKKPDY
SEQ ID NO: NS5 - 21 GNITTRYESENKVVILDSDPLV 330VILDSDPLVAEEEDEREI SVP (SEQ ID NO:469)	SEQ ID NO: NS5 - 23 VILDSDPLVAAEEEDEREI SVP (SEQ ID NO:470)	SEQ ID NO: NS5 - 25 EDEREISVPAEILRKSR 354EDEREISVPA 342EDEREISVPA 355RKSRFAQ 366VWARPDYNP	SEQ ID NO: NS5 - 27 LRKSRFAQALPVWARPDYN (SEQ ID NO:471)	SEQ ID NO: NS5 - 29 VWARPDYNPPLVETWKKPDY (SEQ ID NO:473)	SEQ ID NO: NS5 - 21 GNITTRYESENKVVILDSDPLV 330VILDSDPLVAEEEDEREI SVP (SEQ ID NO:469)	SEQ ID NO: NS5 - 23 VILDSDPLVAAEEEDEREI SVP (SEQ ID NO:470)	SEQ ID NO: NS5 - 25 EDEREISVPAEILRKSR 354EDEREISVPA 342EDEREISVPA 355RKSRFAQ 366VWARPDYNP	SEQ ID NO: NS5 - 27 LRKSRFAQALPVWARPDYN (SEQ ID NO:471)	SEQ ID NO: NS5 - 29 VWARPDYNPPLVETWKKPDY (SEQ ID NO:473)		
SEQ ID NO: NS5 - 21 GNITTRYESENKVVILDSDPLV 330VILDSDPLVAEEEDEREI SVP (SEQ ID NO:469)	SEQ ID NO: NS5 - 23 VILDSDPLVAAEEEDEREI SVP (SEQ ID NO:470)	SEQ ID NO: NS5 - 25 EDEREISVPAEILRKSR 354EDEREISVPA 342EDEREISVPA 355RKSRFAQ 366VWARPDYNP	SEQ ID NO: NS5 - 27 LRKSRFAQALPVWARPDYN (SEQ ID NO:471)	SEQ ID NO: NS5 - 29 VWARPDYNPPLVETWKKPDY (SEQ ID NO:473)	SEQ ID NO: NS5 - 21 GNITTRYESENKVVILDSDPLV 330VILDSDPLVAEEEDEREI SVP (SEQ ID NO:469)	SEQ ID NO: NS5 - 23 VILDSDPLVAAEEEDEREI SVP (SEQ ID NO:470)	SEQ ID NO: NS5 - 25 EDEREISVPAEILRKSR 354EDEREISVPA 342EDEREISVPA 355RKSRFAQ 366VWARPDYNP	SEQ ID NO: NS5 - 27 LRKSRFAQALPVWARPDYN (SEQ ID NO:471)	SEQ ID NO: NS5 - 29 VWARPDYNPPLVETWKKPDY (SEQ ID NO:473)		

Fig. 7c-2

NS5 - 31 ETWKPKPDYEPPVvhGCPPLPP (SEQ ID NO:474)
NS5 - 33 (SEQ ID NO:475) VHGCPLPPKSPPPVPPPRKK

<u>NS5 - 31</u>	<u>NS5 - 33</u>
(SEQ ID NO:)	(SEQ ID NO:)
378 ETWKPKPDYE	390 VHGCPLPPK
379 TWKKPKDYEP	391 HGCPLPPKS
380 WKPKPDYEPP	392 GCPPLPPKSP
381 KKPKDYEPVV	393 CPLPPKSPPP
382 KPKDYEPVVV	394 PLPPKSPPPV
383 PDYEPVVVH	395 LPPPCKSPPPV
384 DYEPVVVHG	396 PPPKSPPPVP
385 YEPPVVVHGC	397 PPKSPPPVPP
386 EPPVVHGC	398 PKSPPVPPP
387 PPVVHGCPL	399 KSPPVPPP
388 PVVHGCPLP	400 SPPVPPDRK
389 VVHGCPLPP	401 PPVPPPRKK

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Fig. 7c-3

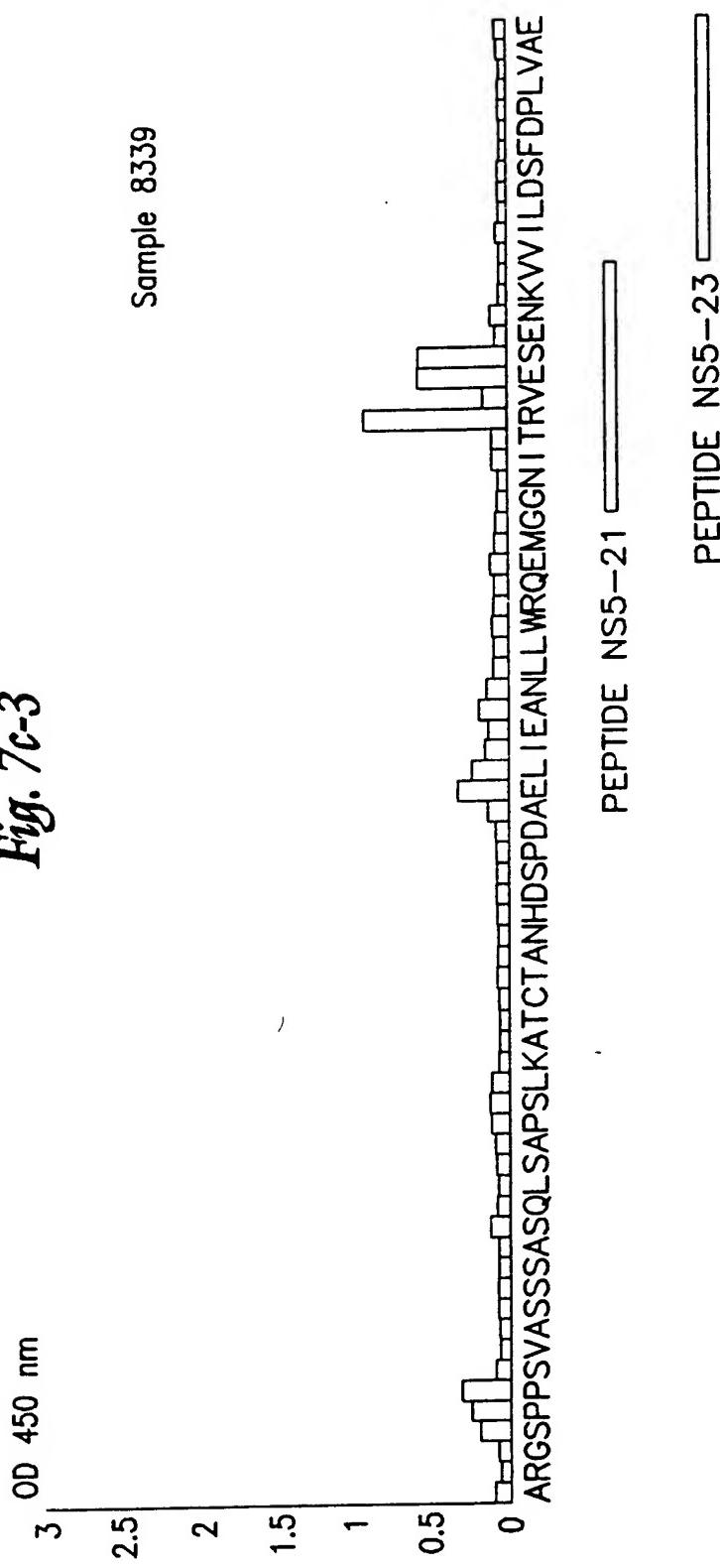


Fig. 7c-4

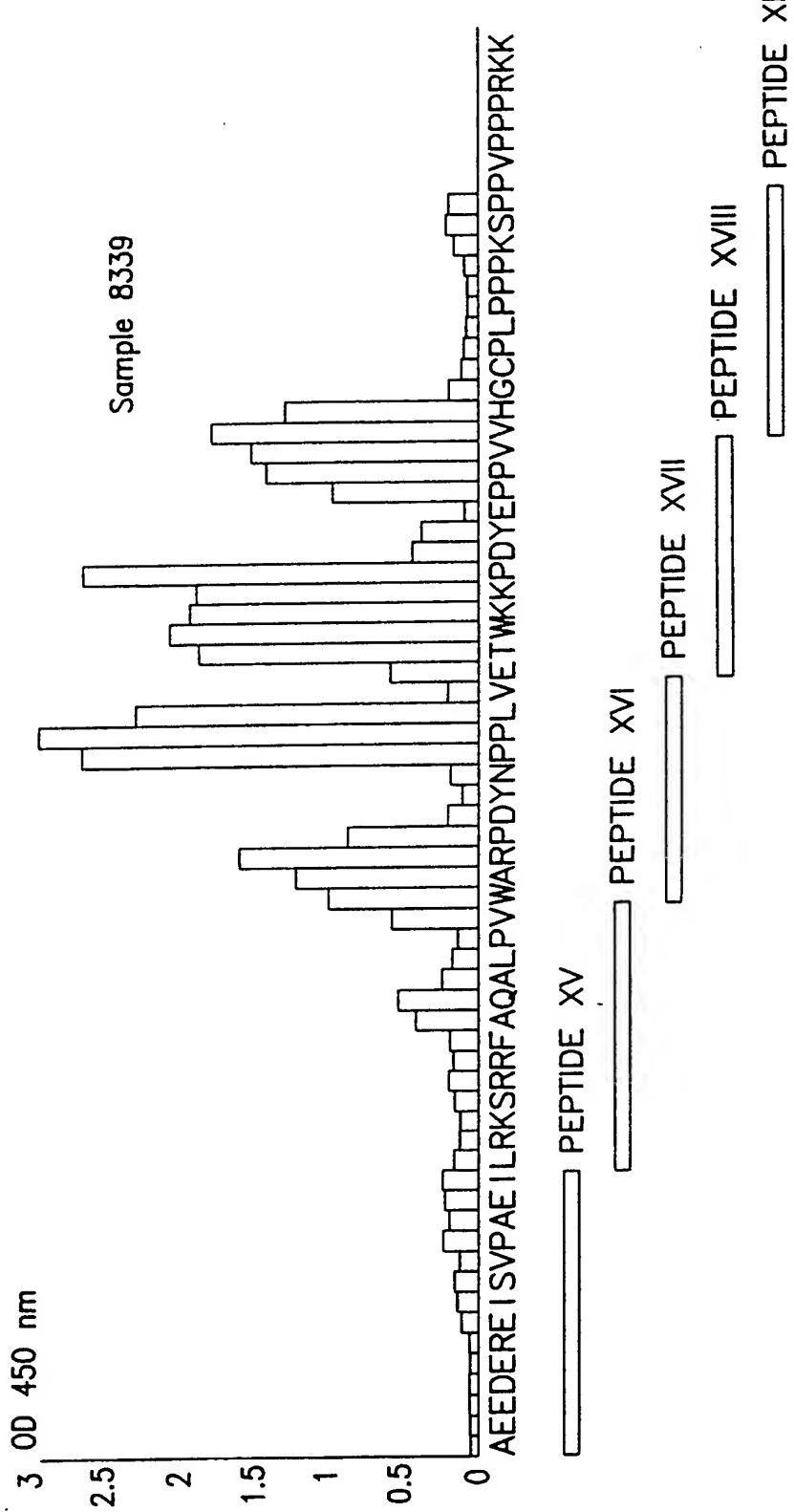
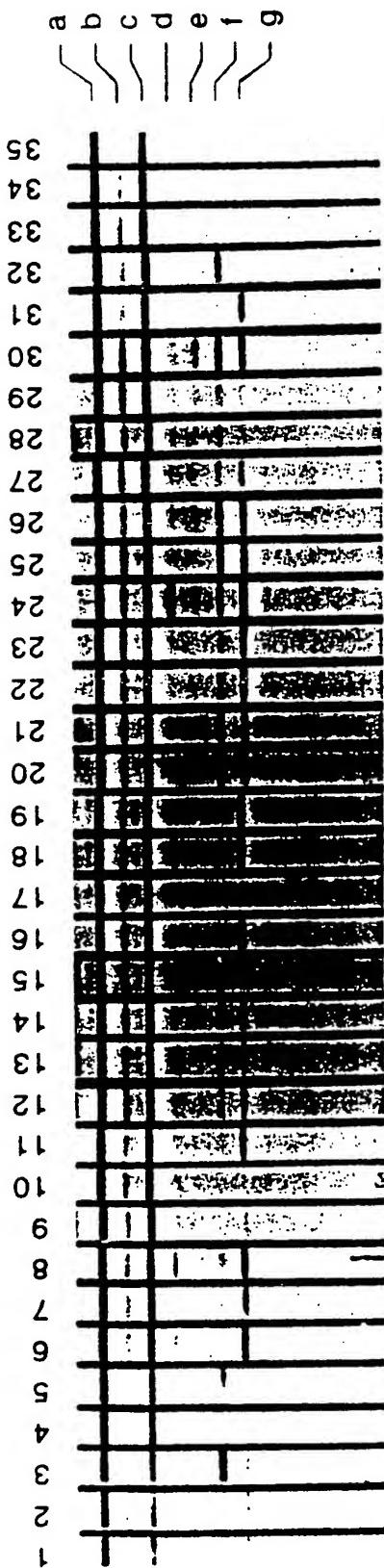


Fig. 8



- a: High intensity control
- b: Low intensity control
- c: Medium intensity control
- d: Peptide XXg-1, unbiotinylated
- e: Peptide XXg-2, unbiotinylated
- f: Biotinylated peptide XXg-1: streptavidin complex
- g: Biotinylated peptide XXg-2: streptavidin complex

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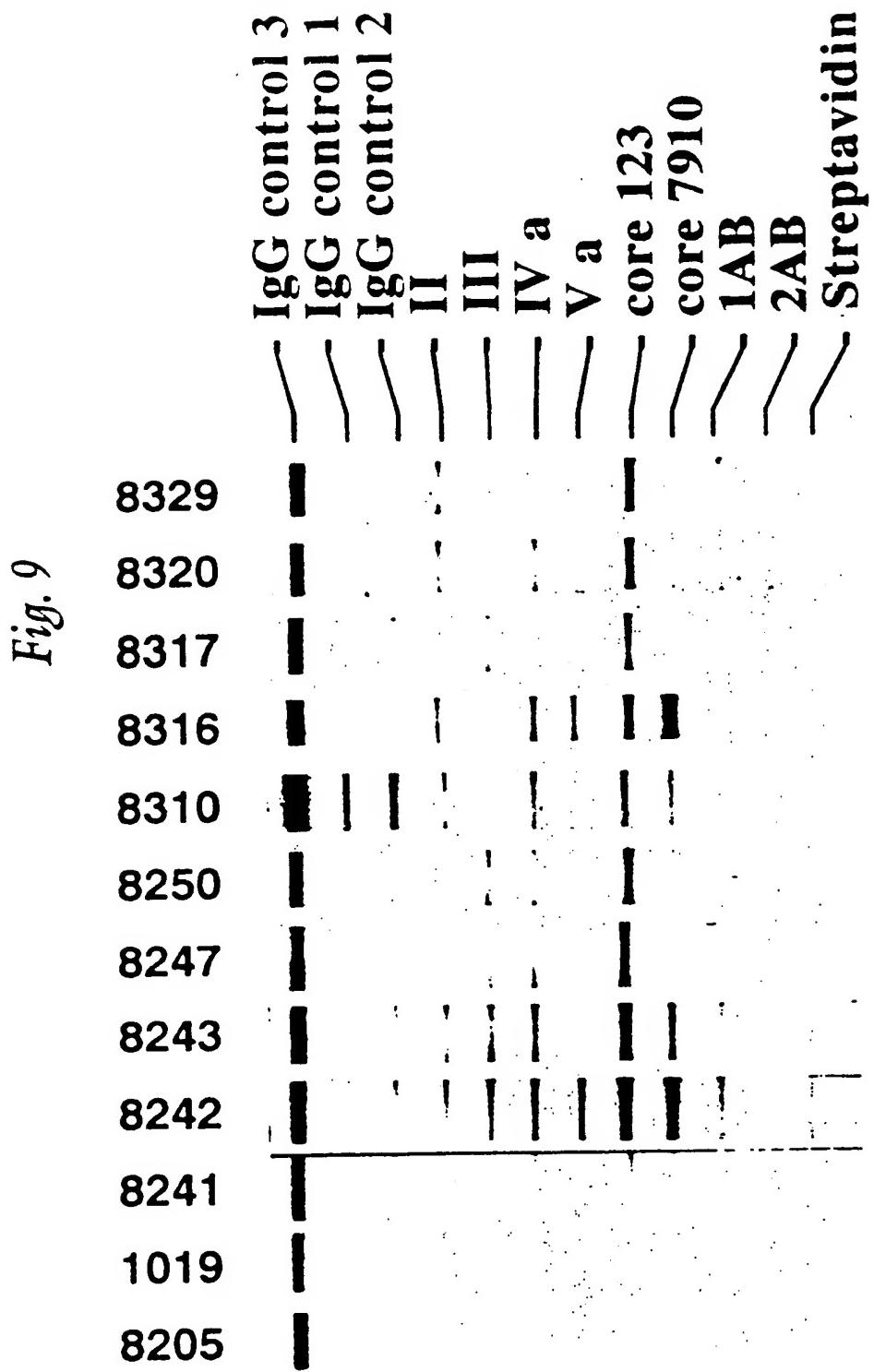


Fig. 10

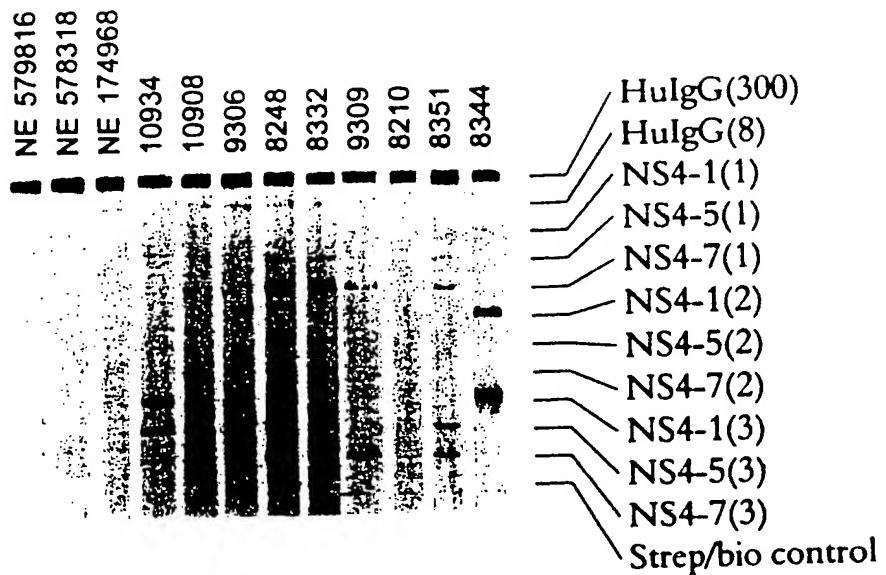


Fig. 11

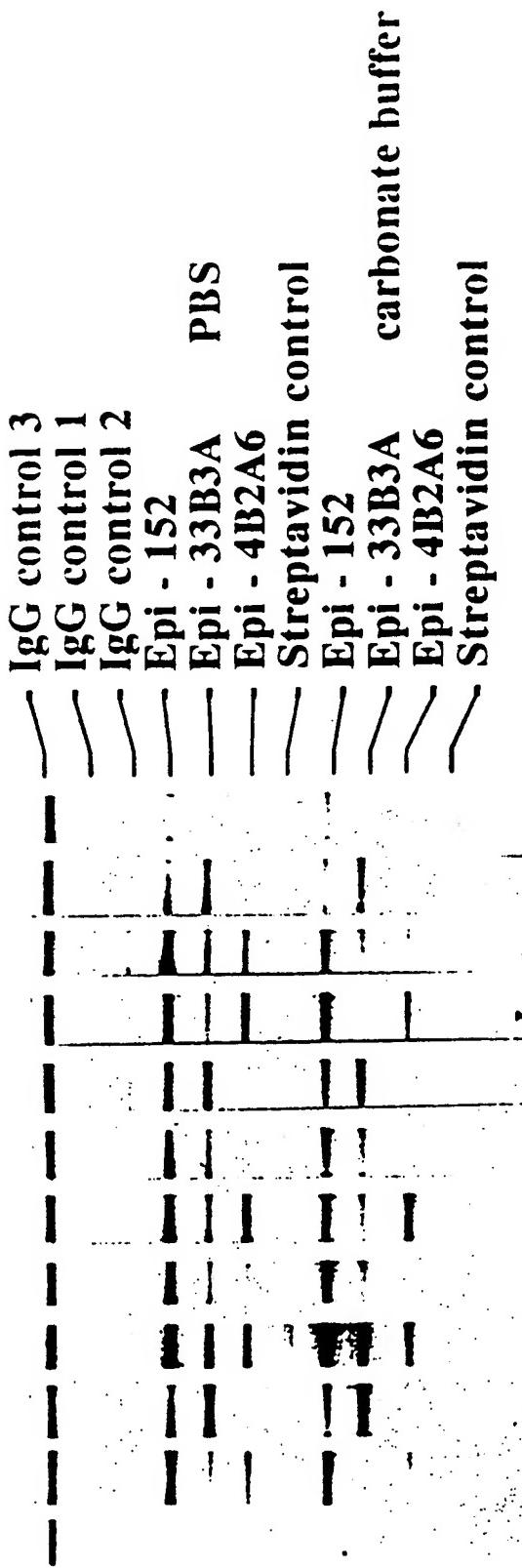
Peptide	Sequence
NS4-a	GALVAFKIMSGEVPSSTEDLV (SEQ ID NO: 445)
NS4-b	VPSTEDL VNLLPAILSPGAL (SEQ ID NO: 446)
NS4-c	AILSPGALVGVVCAAILRR (SEQ ID NO: 447)
NS4-d	(SEQ ID NO: 448) VCAAAILRRRHVGPGEGAVQWM
NS4-e	(SEQ ID NO: 449) GEGAVQWMNRLIAFASRGNH

Fig. 12

(SEQ ID NO:)	Peptide	Amino Acid Sequence
Epi-152 (450)	Bio- G G - I P D R E V L Y R G K K P D Y E P P V G G R R P Q D V K F P	NS4 epitope 1 NS5 epitope 5 Core epitope 2
Epi-33B3A (451)	Bio- G G - W A R P D Y N P P G G Q F K Q K A L G L G S G V Y L L P R R G	NS5 epitope 3 NS4 epitope 3B Core epitope 3A
Epi-4B2A6 (452)	Bio- G G - R G R R Q P I P K G G S Q H L P Y I E Q S G P V V H G C P L P	Core epitope 4B NS4 epitope 2A NS5 epitope 6

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Fig. 13



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Fig. 14a

AMINO ACID SUBSTITUTIONS AT EACH POSITION																						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
M	A	N	R	H	S	T	I	V	T	R	G	F	L	S	T	P	G	A	K	Q	N	I
V	G	D	R	S	T	T	A	Y	R	F	A	S	L	F	T	P	G	A	K	Q	N	I
Q	K	F	S	T	N	A	M	S	R	A	M	S	G	L	V	S	L	F	T	P	G	A
R	A	M	S	G	L	V	S	L	F	T	P	G	A	K	Q	N	I	Q	L	I	N	T

Fig. 146

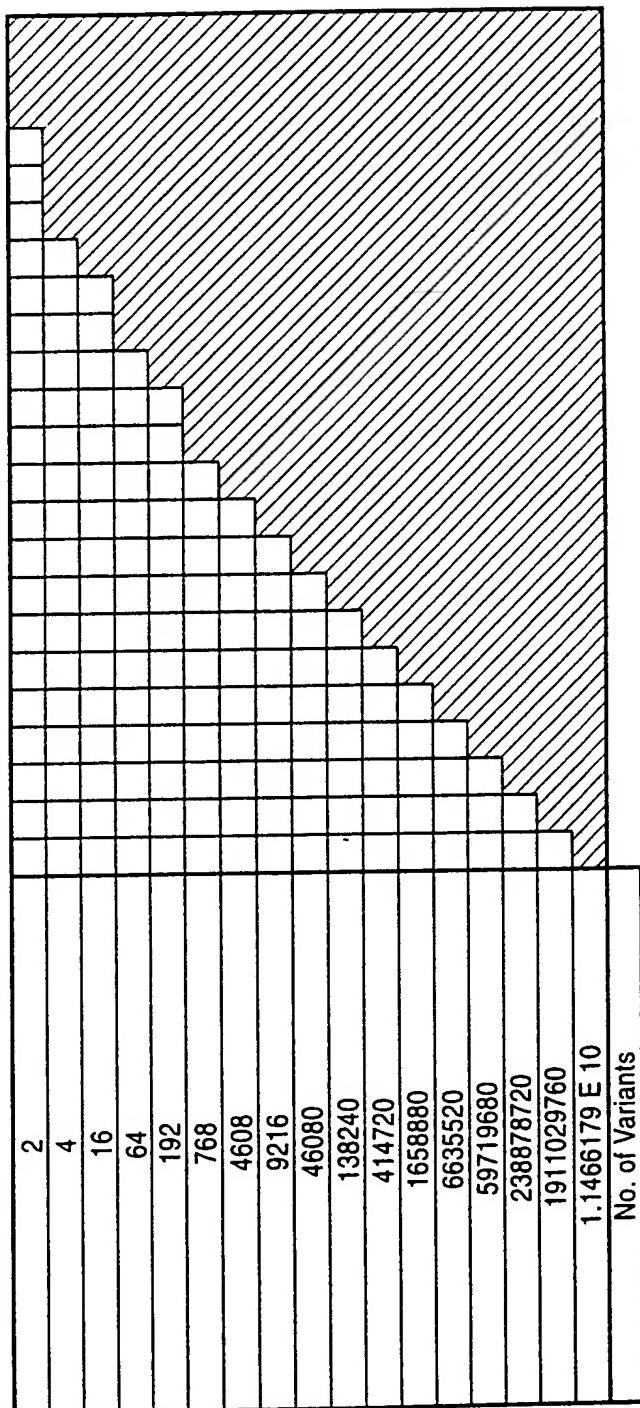


Fig. 14c

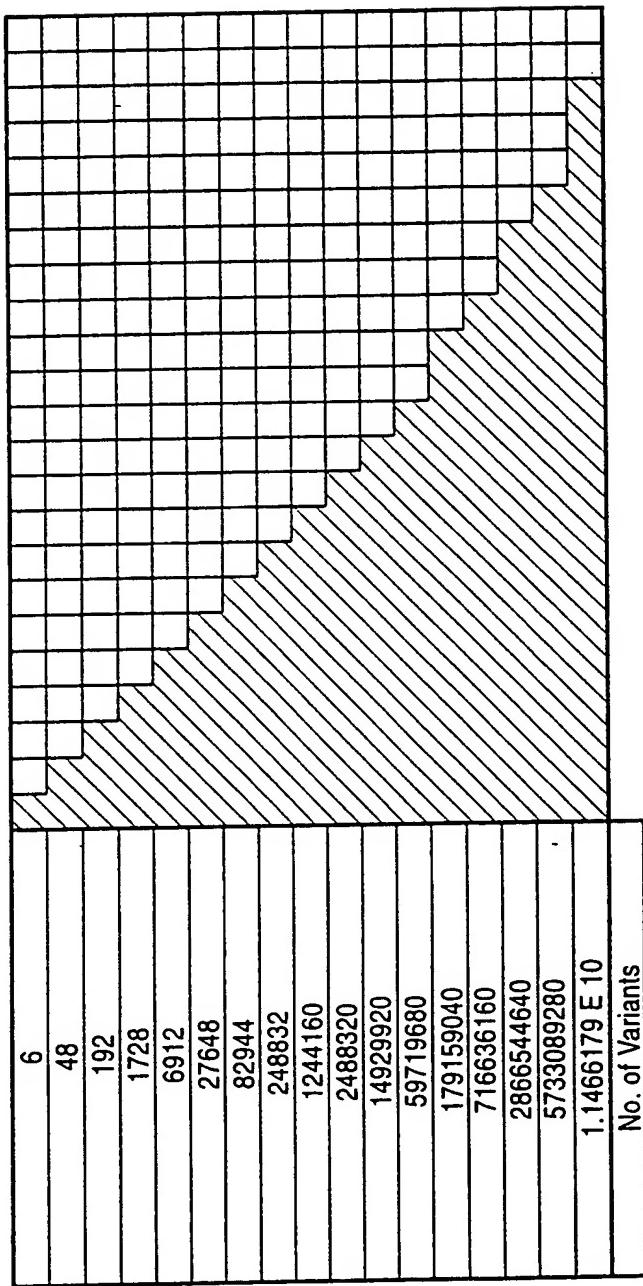


Fig. 14d

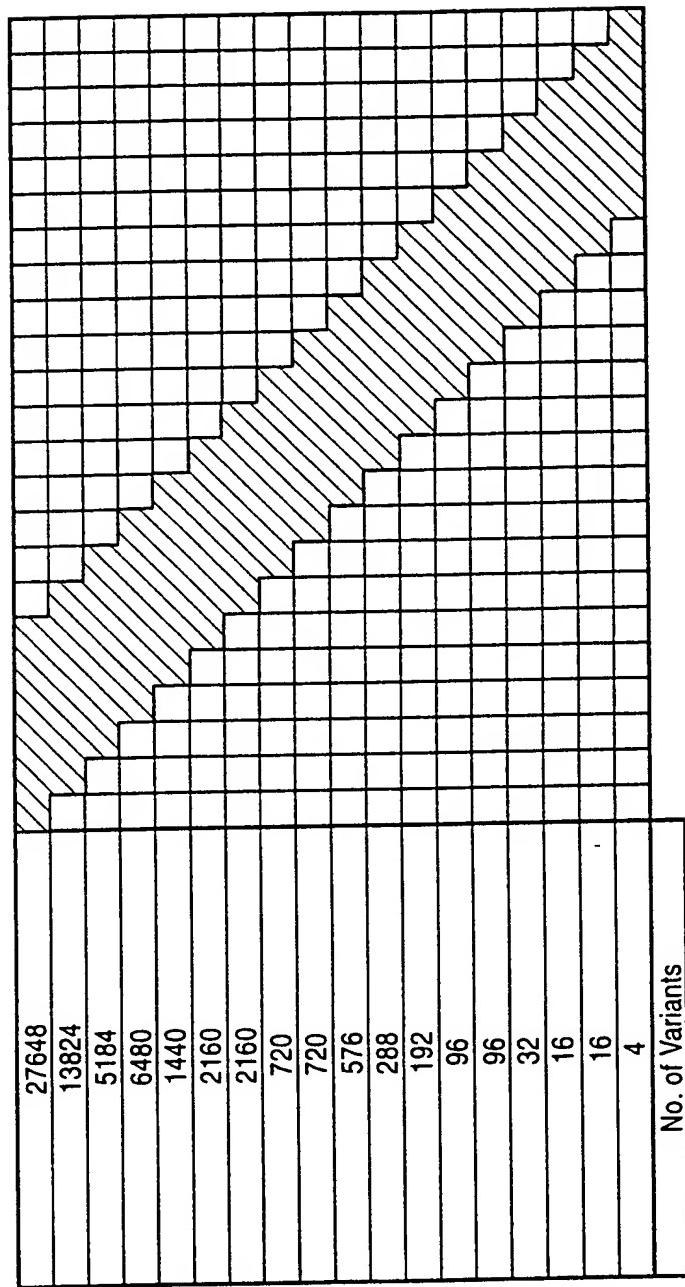


Fig. 15

Mixotope Synthesis Strategy

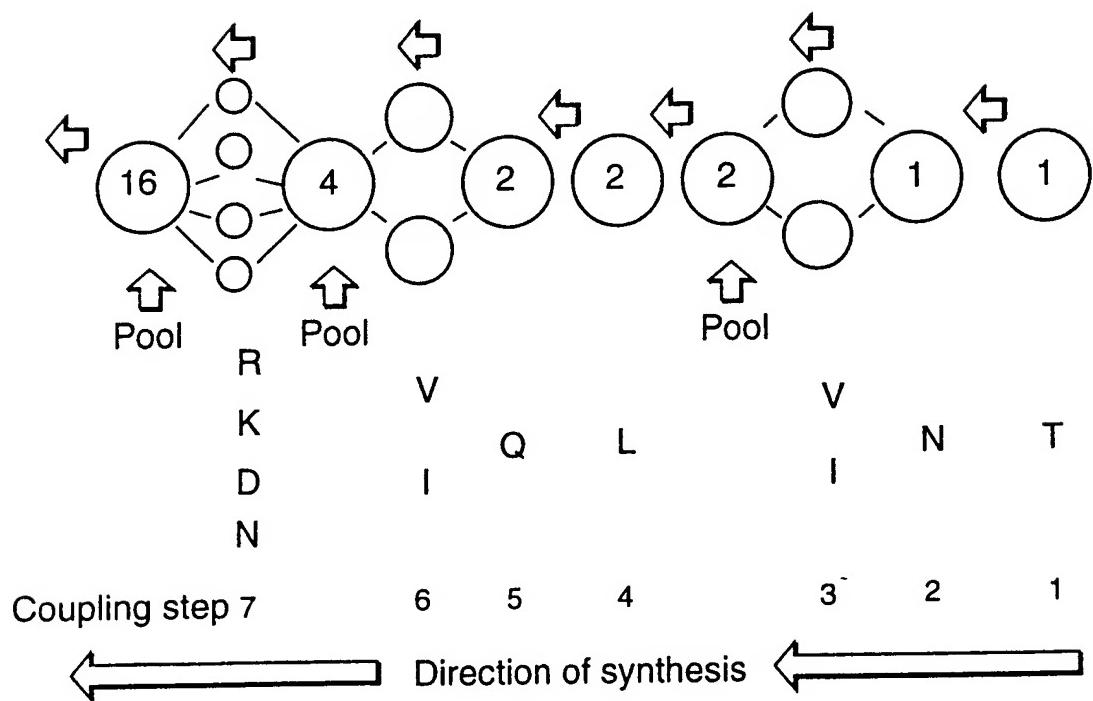


Fig. 16A

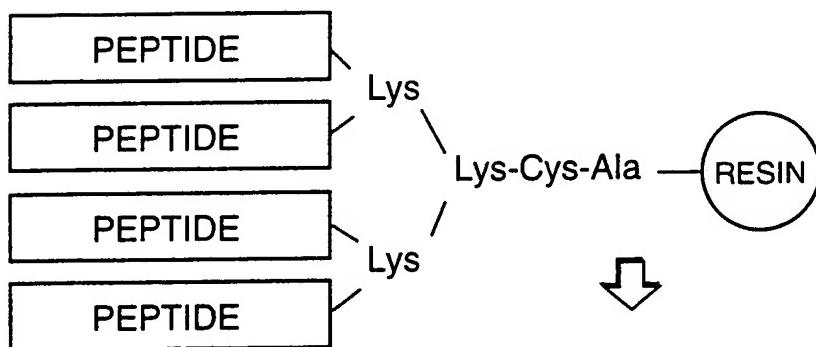
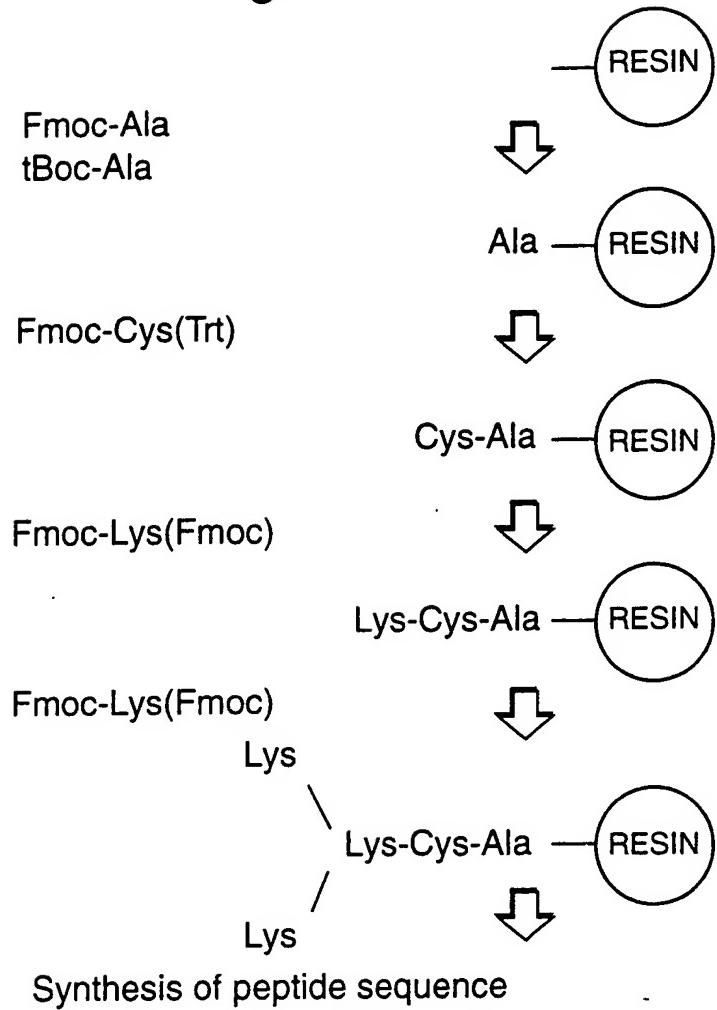
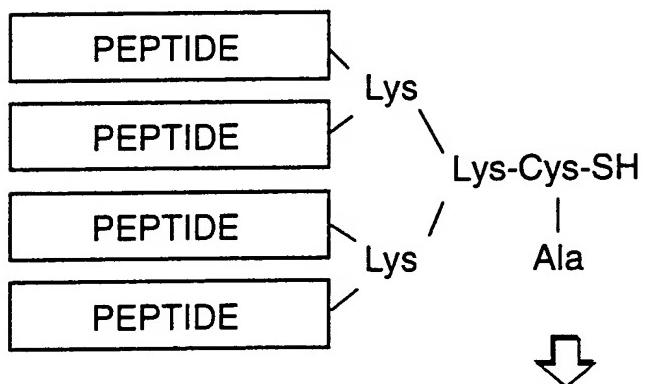
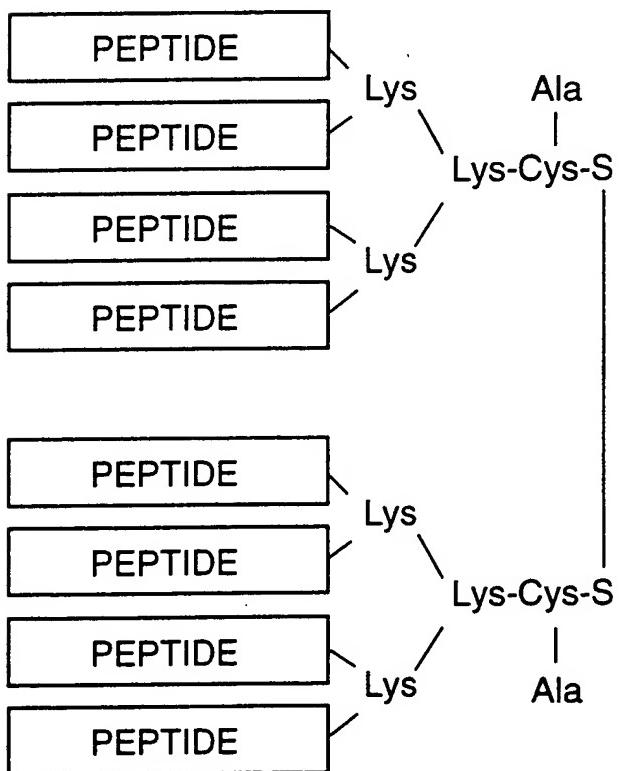


Fig. 16B

Cleavage and side-chain deprotection

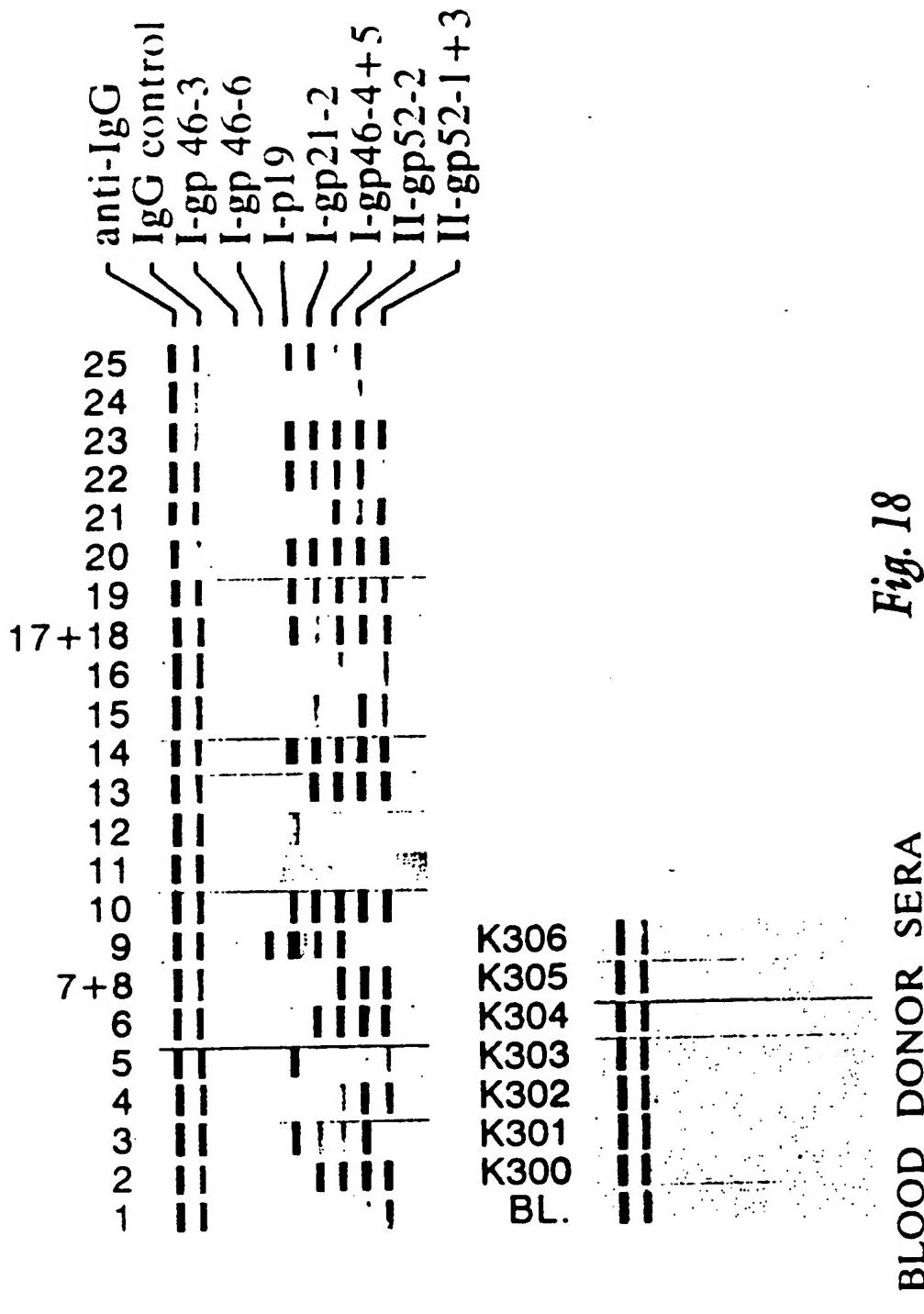


Oxidation and dimerization



BBI ANTI-HTLV III MIXED TITER PERFORMANCE PANEL PRP302

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BLOOD DONOR SERA

Fig. 18

Fig. 17A

	PRE- IMMUNE	FIRST BLEEDING	BLANK
RABBIT No	13.01.92	07.04.92	325 326 327 328

XXc - 1
XXc - 2
XXe - 1
XXe - 2
XXf - 1
XXf - 2
XXg - 1
XXg - 2

RABBIT 325, 326: XXb-2-MAP
RABBIT 327, 328: XXg-2-MAP

Fig. 17B

	PRE- IMMUNE	FIRST BLEEDING	BLANK
RABBIT No	13.01.92	07.04.92	325 326 327 328

XXb - 1
XXb - 2
XXd - 1
XXd - 2
XXa - 1
XXa - 2
XXh - 1
XXh - 2

RABBIT 325, 326: XXb-2-MAP
RABBIT 327, 328: XXg-2-MAP